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HONEY MARKETS

Information from Producing Areas (first half of October)

CALIFORNIA POINTS—Southern California: Heavy warm rains early in the month broke a drouth of long standing, and should greatly benefit nectar-producing plants for next season's crop. Condition of bees varies greatly; some are in fair shape; others are expected to lose over 40 per cent before next spring, based on this spring's count. White honey is moving rapidly; darker grades not so quickly. One small carlot white orange reported sold at 12½c per lb.; ton lots, 13½-14¼c; 60s, 13-16c; small pails, 17-18c; most beekeepers holding for 14-15c per lb. for large lots. One car extra light amber sage, 9½c. One car light amber, 8c; some ton lots, 7½c. Ton lots light amber buckwheat, 10c; ton lots buckwheat and light amber alfalfa, 11c; 60s, 12c; small pails, 13c per lb. Most cases of No. 1 white orange and sage comb reported sold at $7.00 each; some white at $5.75 per case. Beeswax, 26-31c per lb. In the Imperial Valley the usual fall flow from cotton did not materialize. Most carlots of honey have now left the beekeepers' hands in this area. One large car of light amber alfalfa reported sold at 7⅝c per lb.; ton lots, 7½c per lb. Central California: The star thistle flow is reported to be of better grade than last year. Buyers are reported offering 7-7½c per lb. for light amber alfalfa, with many holders asking 8c per lb. Northern California: The fall flow proved disappointing, cool, rainy weather cutting the crop short. Much of the crop has been sold. One car light amber reported moved at 7½c per lb.; 60s, 8½c; small pails, 11½c; ton lots amber, 7½c; small pails, 10½c per lb. A few cases light amber comb sold at $4.80 per case.

PACIFIC NORTHWEST—A wet, mild fall is putting honey plants in good condition for next year. Bees are generally in good shape, except for scattered American foul brood, and some are already packed for winter. Yakima Valley reports a crop 50 per cent to 60 per cent of normal. In western Oregon a crop better than normal is reported from fireweed and alfalfa districts, with around 90 lbs. per colony in Hungarian vetch sections, and very little from clover. Eastern Oregon reports one of the smallest crops in years. The market seems slightly stronger, although buyers are slow to advance prices. Some beekeepers are selling carlots of white to light amber alfalfa or sweet clover at 9¾-10c per lb., but many large producers are asking 11c and over. Ton lots have sold at 9-12c; 60s, 10-11½c; small pails, 12-13c; few, 16-18c per lb. Few cases light amber comb reported sold at $3.75 per case.

INTERMOUNTAIN REGION—A little rabbit brush and other late plants are still blooming in favored sections, but nearly all bloom has been frost-bitten. Some areas have had cold weather and considerable snow. Bees are going into winter in good condition, and stores are ample where extracting was not too close. Many cars have been sold during the past two weeks, but beekeepers generally consider the demand only fair. Demand from cities in the Pacific Northwest, however, is reported above normal. Most large producers are holding carlots of white sweet clover and alfalfa at 9-10c per lb., but some are willing to sell at 8½c per lb., and a considerable number of cars have been sold at that price, with one sale reported at 8c per lb. Other cars of white extracted have moved at 8¾c, 9c, and 9¼c per lb., with several cars of extra white (government standard) at 9c. Ton lots of white and extra white have moved at 9-12c; 60s, 10½-14c; small pails, 12½-15c; some large lots, 10-10½c per lb. Light amber, ton lots, 8-9½c; 60s, 10¼c; some sales amber reported at 7c per lb., buyers returning cans and cases. Carlots of white comb honey sold at $4.40-4.50 per case for fancy; $3.90-4.00 per case for choice. One small car, $3.90 per case for all grades; less than carlots, white, fancy, $4.50-5.00; few, $5.00; choice, white, $3.50-4.00; dark, $3.75 per case. One-half carlot white chunk sold at 12½c per lb.; small lots, 15c per lb. Beeswax, 28-31c per lb.

ARIZONA—Due to summer and fall rains bees are in good shape over most of the state, although some are shy on winter stores. Bees are still rearing much brood. Some extracting is still going on. Only light demand reported. Few sales light amber reported, tons, 7¼c; 60s, 8½-9c per lb. Beeswax has sold at 29-30c per .

TEXAS.—Further rains have fallen, and for the state as a whole the rainfall has been one of the heaviest in years for this period of the year. Many plants are looking green, and prospects for spring are excellent. Bees are working on wild red sage, asters and other plants, and are building up slowly. Several reporters state, however, that an unusually large number of butterflies and other insects are covering the blossoms and hindering bees from securing nectar. Some queen-breeders are having trouble with laying queens swarming out of the nuclei. Many colonies are low in stores and colony strength from the long-continued drouth and considerable winter feeding will be necessary, especially in central and west Texas. Little honey remains unsold. Few sales reported of extracted in 60s at 11-11⅔c per lb. Beeswax, 25c per lb. cash, 27c in trade.

PLAINS AREA—Fall rains came too late to supply much nectar, but did put plants and ground in good shape for winter. Bees have ample stores, and are quite strong for this time of year. Few sales of extracted white clover reported at 11-13c per lb., small pails, 12½-18c per lb. No. 1 white comb has sold at $4.25-5.00; some low as $3.60 per case. Beeswax, 35c per lb.

EAST CENTRAL AND NORTH CENTRAL STATES.—The weather and temperature were very favorable to honey plants during early fall, and the late flow was much larger than usual, except in parts of Ohio, so that ample winter stores were secured and some surplus. Queens were laying late, and plenty of young bees are generally assured. In some sections, however, more honey dew is reported in the hives than for years, and mostly in the brood-combs, so that wintering is a problem. Late reports increase the spotted nature of the crop, which early reports had indicated. Even the best of areas had adjacent sections where a poor crop was obtained. Where yields were large, however, some beekeepers have become alarmed over the thought of possible difficulty in selling their honey, and are selling in small pails as low as 10c per lb. Inquiry in general is increasing, and much honey has been sold, although many beekeepers are waiting for higher prices. Carlot buyers are offering 9-10c per lb., but the only carlot sale reported is of a car of white clover at 9½c per lb. Ton lots of white clover have sold at 9-13½c per lb. 60s, 11-15c; small pails, 13-15c; few, 18c, and some as low as 10c. Ton lot sale of basswood honey reported at 9c per lb. A few 60s of raspberry moved at 15c, small pails, 20c per lb. Dark honey, including buckwheat, has sold in tons at 7-8½c per lb.; smaller lots, 7½-10c per lb. No. 1 white clover comb has moved at $4.50-5.50, few fancy, $5.75 per case. Beeswax, 30-35c, few higher.

NORTHEASTERN STATES—Colonies are generally packed for the winter, and in some sections are reported as having the finest and most abundant stores in years. Frosts or freezes have been general, but some report the aster as still in bloom. In the central Hudson River Valley conditions have been different from those in most other sections. Cold weather has been unusually hard on the bees. There was little surplus honey from buckwheat and other fall flowers; and most of the young colonies of this season are weak in bees and stores.

(Continued on page 753.)

Honey Producers' Reports

Early in October we sent the following questions to actual honey producers:

1. What per cent of the honey produced in your locality has already left the hands of the producers?
2. At what price has honey been sold, or contracted for, if any, in large lots (carload or less) in your locality during the past month. (a) Extracted honey, per lb.? (b) Comb honey, fancy and No. 1, per case?
3. What are prices when sold to grocers in case lots? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case?
4. What is the retail price to consumers in your locality? (a) Extracted honey in 5-lb. pails or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per section?
5. How is the honey now moving on the market in your locality? Give answer in one word as slow, fair, or rapid.
6. What is the condition of the colonies for winter in your locality as compared with normal, considering the number and age of bees and the supply of stores? Give answer in per cent.
7. What is the condition of the honey plants for next season in your locality as compared with normal. Give answer in per cent.
8. How does the number of colonies that will go into winter in your locality compare with that of last year? Give answer in per cent.

Their report follows:

State.	Reported by:	Pct. Sold.	Carload Prices. Ex.	Comb.	Wholesale. Ex.	Comb.	Retail Prices. Ex.	Comb.	Move-ment.	Honey Col. Cond.	Plants Cond.	No.of Col.
Ark.	Jas. Johnson					6.00	.25	.30	Fair	50	60	80
Ala.	W. D. Achord	75	$.09½				$.80		Rapid	100	100	100
Ala.	J. M. Cutts	75					.80		Fair	90	80	105
Ala.	J. C. Dickman	95			.87½		1.20		Fair	90	80	100
Cal.	M. C. Richter	20	.17				1.50		Fair	80	100	100
Cal.	Geo. Larinan	60	.11½				1.00		Fair	100		80
Cal.	M. H. Mendleson	95			1.00	6.85		.40	Fair	75		100
Cal.	L. L. Andrews		.11½		.88		1.00		Slow	100	50	75
Cal.	M. A. Saylor	75	.08	4.00	.65	4.80	.80	.25	Fair	100	100	110
Col.	B. W. Hopper	75	.11	4.25	.60	4.50	.75	.23	Fair	100	100	120
Col.	J. A. Green	5			.75		.90	.20	Fair	100	100	100
Conn.	A. Latham	20			1.00	6.30	1.25	.35	Rapid	110	100	105
Conn.	A. W. Yates	5			1.00	7.50	1.30	.40	Fair	100	100	125
Fla.	C. C. Cook		.07½		.80		1.00		Rapid	100	125	150
Fla.	H. Hewitt	80			.80		1.00		Rapid	100	100	100
Ga.	J. J. Wilder	75	.12½	4.50					Fair	85	90	115
Ida.	J. E. Miller	67	.09	4.00	.48	4.50	.75	.28	Fair	100	100	100
Ill.	C. F. Bender			5.00		6.00		.30	Fair	85	50	
Ill.	A. L. Kildow		.10	4.00		4.80	.85	.25	Fair	110	50	125
Ind.	Jay Smith	75					1.25	.35	Fair	50	100	100
Ind.	T. C. Johnson	50				5.00	1.15	.28	Slow	75	100	100
Ind.	E. S. Miller	10			1.00	5.75	1.25	.30	Fair	100	95	100
Iowa.	E. G. Brown	75	.10		.75	4.80	1.00	.28	Rapid	100	100	110
Iowa.	F. Coverdale	20	.10¾	4.00	.75	4.75	1.00	.23	Fair	100	125	125
Kans.	J. A. Nininger	25			.75	5.50	.95	.30	Rapid	100	100	110
La.	E. C. Davis	50	.08		.75		1.00	.30	Slow	100	100	100
Mass.	B. N. Gates							.47	Fair	100		97
Me.	O. B. Griffin				1.12	7.20	1.50	.35	Fair	85	95	90
Md.	S. G. Crocker	60			1.00	5.50	1.50	.35	Fair	90	100	100
Mich.	F. Markham	10		4.80	.75	5.25		.30	Slow	100	85	100
Mich.	I. D. Bartlett	60	.11½		.75	5.25	1.00	.30	Fair	100	100	90
Mich.	E. D. Townsend	60	11						Fair	110	75	110
Mo.	J. H. Fisbeck	5			1.00	5.50	1.25	.30	Slow	50	75	100
Mo.	J. M. Romberger	25			.80	4.90	1.00	.30	Slow	100	100	100
Neb.	J. H. Wagner	15	.11	4.00	.70	4.75	1.00	.25	Fair	95	100	60
N.J.	E. G. Carr	50					1.25	.35	Fair	100	80	100
N.Y.	N. L. Stevens	75	.09½		.70		.90		Slow	100	100	100
N.Y.	G. B. Howe	62	.11½	5.50	.75	6.00	1.00	.28	Fair		90	90
N.Y.	Adams & Myers		.08			5.50	1.13	.30	Slow	75	40	100
N.Y.	F. W. Lesser		.10¾	4.80	.70	6.00	1.00	.30	Fair	95	125	120
N.Y.	R. B. Willson	50	.11¼	5.00	.87	5.15	1.13	.29	Rapid	50	80	100
N.C.	C. L. Sams	50	.11	4.00	.75	4.50	1.00	.30	Fair	90	100	105
Ohio.	R. D. Hiatt	40			1.05	6.00	1.35	.35	Fair	80	75	100
Ohio.	J. F. Moore	10			.80	4.50	1.15	.25	Slow	80	80	100
Ohio.	F. Leininger		.12	4.80	1.00		1.00	.25	Fair	100	90	100
Okla.	Jos. Heueisen	40			1.15		1.35	.35	Fair	60	75	90
Okla.	C. F. Stiles	50			100		1.35	.35	Fair	80	70	95
Ore.	H. A. Scullen	10			.78	6.00	1.00	.27	Fair	100	100	100
Pa.	D. C. Gilham	15			1.05	7.20	1.40	.43	Fair	90	85	100
Pa.	H. Beaver	25	.11	3.00	.70	3.50	.80	.20	Rapid	95	100	100
S.C.	E. S. Prevost					4.56	1.25		Fair	50	75	75
Tenn.	J. M. Buchanan	100					1.25	.35	Fair	60	50	75
Tex.	H. B. Parks	100			.75		.90		Slow	75	75	90
Tex.	T. A. Bowden	90			.80		1.05		Slow	80	40	70
Tex.	J. N. Mayes				.55	.14	.75	.18	Rapid	100	90	100
Utah.	N. E. Miller		.09						Fair	85	100	100
Utah.	M. A. Gill	80	.08½	4.00					Fair	100	110	125
Vt.	J. E. Crane	25		5.00	1.20	6.25	1.20	.35	Fair	100	100	100
Va.	T. C. Asher	25			1.05	6.00	1.25	.30	Fair	90	90	100
Va.	L. N. Gravely		.15	5.50		5.75	1.00	.35	Fair	63	50	70
Wash.	W. L. Cox	25	.09½		.75	5.00	1.00	.30	Fair	90	85	110
Wash.	G. W. B. Saxton	5	.10		.60		.70		Slow	100	100	100
W.Va.	T. K. Massie	100					1.40	.40	Slow	60	25	85
Wis.	N. E. France	35			.90	4.50	1.25	.28	Fair	100	100	100
Wis.	E. Hassinger	25	.11		.80		1.00		Slow	100	100	100
Wis.	H. F. Wilson	20	.09½		.67	5.25	1.00	.30	Fair	100	100	100
Wyo.	C. H. Ranney	50	.08½				.70		Fair	110	75	90

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60-pound Tins, new, 2 tins per case	1.00 each
160-lb. Kegs (the ideal container for both buckwheat & clover honey)	1.20 each

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3-pound or quart capacity, 1 dozen per carton	.90 per carton

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2-pound honey capacity, 1 dozen per carton	.95 per carton

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White Clover, 60-pound tins, crystallized	13c per lb.
White Clover, 60-pound tins, liquid	14c per lb.
L. A. Southern, 60-pound tins, liquid	12c per lb.

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10-frame Diamond Hives (wood cover)	11.00 per 5
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10-frame Jumbo Hives (metal cover)	14.00 per 5
10-frame Jumbo Hive Bodies W. F	6.50 per 5
10-frame Jumbo Hive Bodies Empty	3.75 per 5
10-frame No. 3 style Comb Honey Supers for 4 x 5 x 1⅜" sections	6.50 per 5
4 x 5 x 1⅜" Sections	4.50 per 500
Foundation, medium	25-lb. lots, 55c lb.; 5 lbs., 60c lb.
Foundation, thin	25-lb. lots, 65c lb.; 5 lbs., 70c lb.

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	25	50	100	200	500	1000
2½-pound cans	$1.30	$2.40	$4.15	$8.25	$20.00	$39.00
5-pound pails	2.00	3.50	7.00	13.75	33.00	64.00
10-pound pails	2.90	5.00	10.00	19.75	48.00	94.00

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60-lb. Cans, 2 cans to the case f. o. b. Lansing.		60-lb. Cans, 2 cans to the case f. o. b. cars Detroit	
Per case	$ 1.20	50 cases	$ 51.00
10 cases	11.50	100 cases	98.00
25 cases	28.50	200 cases	192.00

5-gallon cans in bulk, $9.25 per crate of 24.

Above pails are packed 50 to the carton and will keep bright and clean until time of using. 2½-pound cans, 100 to carton. Above prices are f. o. b. cars Lansing.

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	1 case	10 cases	30 cases
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16-ounce round jars, 24 to case	1.35	13.00	36.50

CORRUGATED-PAPER SHIPPING CASES

These cases provide an inexpensive package for handling comb honey. They are partitioned so that each section is in its own compartment.

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24 4¼x4¼x1⅞-inch Sections	$2.20	$10.75	$21.00
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GLEANINGS IN BEE CULTURE

NOVEMBER, 1925

EDITORIAL

OUR CORNERSTONE

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value overestimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "introductory" in the first issue of Gleanings in Bee Culture, January 1, 1873.

DEPARTMENT Bulletin No. 1349, "The Brood-Rearing Cycle of the Honeybee," by W. J. Nolan, Associate Apiculturist of the Bureau of Entomology, Washington, D. C., has just been published by the U. S. Department of Agriculture. This bulletin gives the results of several years of study of the seasonal fluctuations in brood-rearing. It has a direct practical application in honey production and should be in the hands of every beekeeper in the United States, for it discusses the vital problem of the period of greatest brood-rearing in the spring. No doubt a limited number are available for free distribution, and when these are exhausted additional copies can be had from the Superintendent of Documents, Washington, D. C., at 10 cents per copy.

New Bulletin for Beekeepers

THE American Honey Producers' League has set the date for National Honey Week as November 15 to 21. During this week every beekeeper and every dealer in beekeepers' supplies, as well as every one interested in the advancement of the beekeeping industry, should put forth extra effort to bring honey to the attention of the American people. The League Bulletin for October outlines a general plan for doing this and urges beekeepers everywhere to take some action to speed up the sales of honey during this week. Copies of this issue of the Bulletin can probably be had by writing to Professor R. G. Richmond, Fort Collins, Colorado. It has been estimated that there are at least 800,000 people in the United States who keep bees. Whether they keep one colony or 1000 colonies does not matter in this campaign, and if the entire 800,000 will take some action to boost honey sales during the week of November 15 to 21, certainly some impression will be made upon the available supply of honey. The Editor suggests that the extra effort need not stop on November 21, but so far as boosting honey as a food is concerned it should be carried on during the 51 other weeks of the year.

National Honey Week

BEEKEEPERS who expect to furnish their neighbors with honey for automobile radiators this season should read carefully the experience of Leroy Baxter, published on pages 719 and 720 in this issue, in order to be fully informed as to the conditions under which the honey solution can be safely used for this purpose. Those who have used the honey mixture in their cars year after year without encountering any trouble of this kind do not ask for a more satisfactory method of preventing freezing in automobile radiators; but those who have had a single experience of the kind Mr. Baxter describes will probably never again try honey for this purpose. As a rule, honey should not be sold for use in automobile radiators unless the purchaser is cautioned in regard to the conditions under which it may safely be used. There are three outstanding things to be observed in using it: The gasket under the cylinder head must be absolutely tight so that none of the solution can creep into the cylinders; the solution should never be permitted to

Honey in Automobile Radiators

get so low in the circulating system that the honey will be scorched in the jacket around the cylinders or in the cylinder head; and the car should never be taken out of a cold garage when the temperature is zero or below and driven hard without first making sure that the solution is circulating properly. If it becomes mushy because of low temperature, it is necessary to run the motor for a few minutes with a blanket over the radiator until the solution is warm enough to circulate freely. When these conditions are carried out the honey solution is very satisfactory. If the solution becomes low by leaking, the radiator should be replenished with more of the solution; but if it becomes low through the evarporation of water, it should be replenished with water only.

The Comb Honey Situation

SINCE the great slump in the honey market in 1920 and 1921 there has been a slow but gradual improvement in the market for extracted honey, though the improvement has been in the movement and the stabilizing of prices rather than in increased prices. The prices on large lots of extracted honey, as shown by the government market report as well as by the reports for our market page, are remarkably uniform throughout the country, the difference being explainable by the differences in freight rates and differences in the quality of the honey.

This is by no means true of comb honey. Reports of sales of comb honey that have reached the Editor's desk indicate extreme variation in prices. Fancy comb honey is reported as being sold in case lots to dealers all the way from $7.00 per case down to $3.00 and even less. A number of reports have been received of fancy comb honey being sold at retail by the beekeeper at 12 to 15 cents per section. Early in the season several carloads of fancy and No. 1 comb honey were sold in the West at $4.50 per case, but before these were delivered beekeepers were selling in case lots to their grocers at $3.00 per case and less. The result, of course, was that the many buyers withdrew from the market, which only aggravates matters and results in further price-cutting. We have, therefore, the peculiar situation of cheap comb honey where production was heavy this season, and a poorly supplied market in regions where but little comb honey was produced, largely because dealers are afraid to buy on such a chaotic market.

Of course, comb honey has lost its place in the market to some extent partly because it was practically off the market during the World War and partly because of a change in conditions in the merchandising of foodstuffs, as pointed out by Morley Pettit in his article in this journal this month. If comb honey ever comes back again to the extent that it will be offered for sale in every corner grocery as it was before the World War, it will be necessary to put greater sales effort behind it than ever before. Just how this can be done is a problem. But if every beekeeper in the country who supplies his local grocers with honey, and every roadside seller, would handle comb honey, this would go a long way toward restoring this product to its former place in the market. Fancy comb honey still sells itself when properly displayed in the market, but it must be sold to the dealers before it can be so displayed.

One great difficulty in the merchandising of comb honey is that of grading. Fortunately, the federal government is now taking up the matter of the grading of comb honey and it is to be hoped that comb honey will be put on the market next year bearing the stamp "U. S. Fancy," "U. S. No. 1," etc., so that it will not be necessary for the dealer to re-grade and re-pack comb honey before it is safe to send it to his customers. However, grading rules alone do not insure proper grading. Producers must learn the importance of strict and careful grading before comb honey can be sold freely without first re-grading.

More Honey Dealers Needed

THE marketing of honey would be a less difficult problem if the yields and the quality of the honey in the various localities were more nearly constant. Regular channels for marketing could then gradually be developed, whether the locality is an exporting region or an importing region. With a bumper crop of fine-quality honey one season in a given locality, and but little if any surplus honey the next season, and that perhaps of poor quality, the development of a system of distribution that would take care of these varying conditions is exceedingly difficult, requiring new outlets during bumper seasons, and a reversal of the current during poor seasons when the locality should become an importing one. In the case of the staple agricultural products the variation in yield in different localities is fairly well taken care of by dealers, but in the case of honey an adequate system of distribution is yet to be worked out.

This explains at least in part why certain regions, especially in the West,

which are exporting regions and in which the crop varies less violently from year to year, the marketing of honey is being worked out better than in other regions which may have a large surplus one year and almost no crop the next. In regions of the former type outlets for the surplus honey are being gradually developed either by co-operative organizations of beekeepers or by private enterprise; but in regions of the latter type honey is often sold at ruinously low prices when the crop is heavy, and but little is consumed when there is a crop failure.

For instance, in 1924 the central portion of the white clover region had a bumper crop, reaching its peak in Indiana, where the yield in some cases was from 300 to 400 pounds per colony. Small producers in this region, who usually have an outlet for more honey than they can produce, found their market flooded with honey, so they were willing to unload at ridiculously low prices. This year the same territory produced a very short crop, and the markets which were flooded with honey last year are almost bare this year. This season there is a flood of honey in some of the northwestern states, where honey is now being sold at ruinously low prices by some producers, in spite of the fact that other localities are short of honey. Next season the big yields may occur somewhere else, and so it goes. Someone has said that in beekeeping the seasons bring either a feast or a famine.

When a bumper yield comes in any given locality beekeepers apparently get the impression that the whole country is flooded with honey, little realizing that other regions not far distant may have a short crop. Under these conditions large quantities of honey are often sold locally at retail at prices even below the prices large dealers are willing to pay in carload lots, thus not only causing great loss to the producers but demoralizing the market as well.

It is easy enough to criticise the price-cutter and call him ugly names, but not quite so easy to offer a workable solution for his problem. In regions which do not regularly ship out honey year after year there is great need for the working-out of some system by which honey may be assembled in carload lots to relieve the situation in bumper years. The carload producer can, as a rule, find an outlet for his honey if it must be shipped to a distant market; but the small producer often has only one recourse, that of price-cutting. The same system by which honey is moved out of a region in a bumper season might be used to bring in honey when the crop is short.

The great difficulty is in building up a system for assembling and shipping out honey in regions where honey is shipped out perhaps only one or two years out of five, as would be the case in many regions, since during average seasons the local demand would absorb all that is produced. In some cases the problem could be solved by co-operative effort, but in other cases this can not be done under present conditions. Where co-operative selling is not practical the problem is already being solved to some extent by individual effort. In many cases honey-producers who have some talent for selling, buy up the smaller lots of honey in their respective communities and thus become honey merchants. These men are then in position to purchase honey from another region to supply their customers during poor seasons, and to ship the surplus honey out of the region during seasons of plenty. There are hundreds of such honey merchants in the United States who handle all the way from a few hundred pounds up to several carloads and are thus helping in the complicated problem of the better distribution of honey; but this development has a long way to go before it can take care of the situation.

Owing to the difficulties in merchandising honey, the small margin to be made in handling it, the limited outlet, and the extreme fluctuations in production in many regions, those engaged in buying and selling other commodities in a large way are not interested in handling honey. The honey dealers, as a rule, come from the ranks of beekeepers or dealers in beekeepers' supplies. They must have a deeper interest in honey than the dealer, who is interested only in profits. For this reason, the Editor believes that in regions of great fluctuation in production, where co-operative marketing of honey is not practical, beekeepers who have some sales ability should buy and sell honey. Also every dealer in beekeepers' supplies, whether large or small, should deal in honey, buying from beekeepers during seasons of plenty to ship to a region where honey is scarce and in poor seasons buying from regions of plenty to supply his beekeeping customers who do not have enough to supply their demand.

As dealers in honey, the beekeeper or the supply dealer must expect plenty of criticism from those who are benefited by this service, for there will be many occasions for disputes and misunderstandings from the various transactions. Furthermore, only small profits and probably even losses must be expected; but if the industry is to advance, or even hold its own, somebody must do these very things, and it can not be expected that we can induce people outside the industry to do them for us.

XUM

NEW PROBLEMS IN MARKETING

By Morley Pettit

Marketing Methods of a Few Years Ago Not Adequate in Present-Day Merchandizing

Beekeepers have been "beekeepers" for a good many years. Before that they were "bee-masters"; but a new generation has arisen known as "honey-producers." Bee-masters kept their bees in the garden, hived the swarms and were thankful for a winter's supply of honey. Beekeepers still love their bees and meet in convention to talk about them. They are strong on fraternity and produce some honey on the side to sell for whatever they can get. Honey-producers are in it for their bread and butter and some "jam" on the bread as well, if they can make the returns spread that far. They can still visit with another bee-man better than with anyone else under the sun; but when it comes to making the most out of their year's labor, fraternities can go hang.

Reference was made in a previous article to the "battle of foodstuffs," an apt phrase borrowed from our general manager. From primitive days man has been a fighting animal, and we might as well face the fact that while the world stands there will be wars among men. However much we all hope for an end to wars which destroy life and property, competition will continue, and the battle will be waged with increasing intensity as the opposing forces perfect their organizations and their munitions and equipment. Individual effort in physical warfare has long since given place to highly organized and competently officered massed effort; but beekeepers, and most honey-producers as well, are still going it alone as free lances in the battle of life. How they usually fare in the unequal contest most of us know too well.

Changing Conditions, Both in Merchandising and Production

In presenting some arguments for co-operation I am not going to repeat the well-known anecdotes of the bundle of faggots, the nest of hornets, or the two calves. These have often been served up in various forms, and they are most convincing, but the marketing of honey continues in an unorganized, or rather a disorganized condition. So long as production fell short of the natural demand, all was fairly well. When I was a boy, farmers' buggies used to line our front fence evenings during extracting time, and milk pails, butter crocks, churns, etc., came to be filled at the honey gate. Every customer and accompanying visitor had to have a feed of honey, and then a drink of water at the pump on the way out. Those were the days of good fellowship for the neighbors and easy money in a small way for the beekeeper, as each one had a large area to himself. But with expensive production methods he could not expand, and a five-ton crop was a rarity for incredulous discussion the countryside over.

When production increased and the home market became glutted, the grain-growing districts of the cold northwest formed an excellent outlet. Many of the people there were from Ontario, and, without orchards or bees, they naturally sent back home for apples and honey. The Pettit Apiaries was one of the first producing firms to develop a real mail order business, taking advantage of this favorable condition for the sale of honey. By classified advertising in farm journals and by circular advertising sent to customers and prospects, we secured orders which took care of our whole production over quite a series of years. Under such favorable conditions we did not really *sell* honey, we merely let people know we had it, and they bought it from us. The same applied to most other lines of food. Certain foods were really advertised, but most of the staples sold as people called for them. This was probably the origin of the well-known saying among retail grocers, "We don't have much call for honey." They did not then and do not now. Since then conditions have entirely changed in most lines but honey. Competition is so keen that magazine pages, roadside billboards, and every other medium one can think of, are used for advertising such common necessary foods as flour, bread, granulated sugar, etc.. This naturally cuts down consumption of unadvertised goods.

Add to this the fact that honey production has increased enormously in the last few years and it is easy to see the problem confronting the honey-producer. Take the case of the Ontario producer as an example. A few years ago there was a strong inclination to welcome all comers as honey-producers. Now, where we have our heavy investment in buildings and fixed equipment, as well as in hives, supers, winter-cases, etc., and see our territory being hemmed in and overlapped by new-comers—and old-comers, too—we feel quite differently. But the worst is that the previously alleged-to-be "cold" northwest, where we formerly sold so many carloads of honey, has refused to stick to its grain growing and is rapidly

turning to mixed farming with sweet clover—and honey production. We still ship carloads of honey out there, but the handwriting is on the wall, and our old customers are beginning to kindly inform us that the reason they have not been buying so much honey from us recently is that their neighbors are producing it right next door to them.

It is thus that we are confronted with a condition and not a theory. We have over-production and under-consumption and lack of proper distribution because we have no organized fighting force with which to meet the enemy in the battle of foodstuffs. It is said that the barbarian hordes of Persia were unable to stand before the armies of ancient Greece, although far superior to them in numbers, because they fought as individuals, whereas the Greeks contended as one man. The honey-producers of America are hardly barbarians, but most of them resemble the ancient Persians in this one respect. The enemies of honey are these: sugar, manufactured syrups, fruit, and fruit products such as jams, jelly, marmalade, canned and preserved fruits Every other article of food competes more or less directly with honey to the extent that its name and virtues are shouted at the bewildered consumer, because unfortunately (if you please) the capacity of the human stomach is limited. All foods are of course more or less enemies of one another and are mostly organized as separate armies. Their equipment for the war of competition is proper grading, and standardization of packages suited to market requirements. Their service men are found distributed among the selling organizations of the world and their ammunition is advertising.

Why Many Large Dealers Avoid Handling Honey

There is in the civilized world an organization for trade which for many centuries has grown out of the need to bridge the gap between producer and consumer. Conducted as private enterprise, it has been necessary for the trader to get his reward from the producer on the one hand and from the consumer on the other. This makes it quite natural that he should buy for as little as possible and sell for as much as he can get. The old proverb "Let the buyer beware," might be extended to say, "Let the producer also beware." That is exactly what the producer should do when he enters the market with his product, for he is then sitting in at a game in which the dice are loaded against him. He may be a honey-

Exhibit of the Ontario Honey Producers' Co-operative, Ltd., at the Canadian National Exhibition at Toronto.

producer, a beekeeper and a bee-master all in one, and throughout the whole year; but he is a salesman only once, or for a very short period, and probably not a good one at that, for very few men excel in more than one profession.

His opponent may not know a bee from a butterfly or a super from a sunflower; but he is engaged in the business of buying and selling goods in the same class as honey all the year around. His living depends on it and it is quite natural and right that he should make the most profitable purchases he can every time. Under existing conditions he knows that no matter what price he pays one man for his crop it is altogether likely his competitor across the street will be able to purchase another beekeeper's crop tomorrow for a lower price. That state of affairs puts him in a very awkward position, because all such goods are handled on a narrow margin and no matter how low his buying price may be he stands a chance of making no profit if he escapes an actual loss on the transaction. With no standard of price amongst producers, I think if I were a jobber I would do as many of them are now doing—pass up honey entirely. With greatly increased production, and no national advertising even to maintain an adequate ratio of consumption, and only spasmodic and inadequate efforts at control of producer distribution and price, we find the honey markets where they are today.

Co-operative Marketing of Honey

The only answer to the problem I can see is co-operative organization of producers. This is being conducted with various degrees of success in New Zealand and in some of the United States of America. In Ontario the recently formed co-operative company is rapidly gaining the confidence of the honey-producers not only of this province but of the other provinces as well. As a co-operative stock company it differs from any other kind of stock company in certain important .features. The shareholders are themselves the producers of what is sold and the "consumers" of the supplies that are bought. At business meetings a shareholder has only one vote regardless of his number of shares, or his financial stake. This last point does not seem like good business, but it is a rule of co-operative companies and works out all right.

The total annual crop of all members is pooled and at the end of the selling season each member receives his share of the proceeds of the season's business, in proportion to the amounts of the different grades of honey he contributed to the pool. Each and every member is bound by a contract covering a period of years to report his whole output of honey to the pool. He may then (in fact he is urged to do so) sell as much as possible to the consumer and retail trade, at prices set by the management of the company; but sales to chain stores and wholesale houses or jobbers are made only by the central management.

Success of Co-operative Dependent Largely Upon Management

After securing members bound by a cast-iron contract—"a contract more binding than the marriage contract," as Aaron Sapiro says—the next most important move is to obtain the services of an efficient management. This consists of a board of directors, successful honey-producers chosen from different districts in the territory, a general manager, and a staff for the head office. The general manager himself has the greatest responsibility and must be selected with the utmost care. He does not need to be a beekeeper, and is probably better to come in as a stranger to all concerned. It will be his business to sell honey, not as a producer sells his crop to a buyer, but as an all-year-around proposition of making a place in the markets of the world for the special brand of honey which his company produces. He may even not know the honey trade very well on the start, but he will learn that quickly enough if he is experienced in the wholesale grocery trade; and he is able to command a salary which would make most beekeepers gasp.

With a large membership, as in Ontario where we have nearly a thousand members producing five or six million pounds in a normal season, it works well for an assistant manager to understand production methods and to divide the responsibility with the general manager. Then, of course, the bookkeeping and correspondence connected with a pool of so many members calls for a fair-sized office staff. Above all, the management needs the humble virtues of sincerity, honesty, integrity, persistence and tact, together with tireless courage, boundless confidence and unquenchable enthusiasm for the delicious food which they are determined to put across with a loud report in the food markets of the world. In our general manager, Mr. A. G. Halstead, and our secretary, Mr. W. A. Weir, and in their efficient staff of helpers, we feel that we have a working team that is hard to beat.

When the Editor of Gleanings asked me to write this article I suggested to Mr. Halstead that he might give me some pointers. In his reply he asked me to "point out to them the absolute necessity of an expert marketing company because of the increased production all

over Canada . . . the absolute necessity of proper grading, the standardizing of packages, so that we can accommodate ourselves to the markets we are seeking, and not expect them to accommodate themselves to us.''

''Also suggest the further necessity of collective effort in advertising our wonderful product, and letting the world know the wonderful food properties of honey, which could not possibly be done individually. The necessity for advertising is the fact that in the battle of foodstuffs at the present time practically every food product in the world is extensively advertised but honey. No wonder it has been in the background! Point out to them the need of stabilizing the markets, and having firm prices so that wholesalers can purchase large quantities with absolute confidence. . . . If the beekeepers in the honey-producing states would only get properly organized, they certainly could increase the consumption of honey by effective advertising.''

What Co-operation Has Done in Ontario

When the Ontario Honey Producers' Co-operative Company, Limited, started functioning in the summer of 1923 they had to assume a large percentage of the 1922 crop which was unsold. The 1923 crop was large and the 1924 crop was by no means small. Members were unaccustomed to co-operation, and marketing machinery had to be prepared wherever there was a prospect of business. A brand name, ''Beekist,'' was chosen and special-design lithographed pails secured for the 1923 and succeeding crops. All this meant an enormous amount of detail, but it has been gotten through and the 1924 crop is cleaned up by the end of September, 1925.

Like true love, the course of the co-operative has not always run smoothly. The actors in the drama have been only human and there have been mistakes and heart-burnings and recriminations. The newer generation of honey-producers has not always remembered Joseph, but we have a relief from selling worries which is mighty comforting and members are flocking to the organization daily.

Co-operation is no fetish or panacea. After the work is planned the plan has to be worked, and success depends entirely on the personnel—the loyalty of the members, and the ability, wisdom, and experience of the management.

Georgetown, Ontario.

VALUE OF DOUBLE-WALLED HIVES

By J. E. Crane

Some Early Experiments with Various Methods of Packing and Different Kinds of Packing Material

Wintering bees here in our cold northern New England has always been a serious problem. When I began beekeeping little was known about the subject by local beekeepers. Bees were in wooden hives and set in a shed boarded up on the north side and open to the south. If they lived through the long cold winter it was good luck; if they died it was bad luck, and that seemed to be about all there was to it.

When I began keeping bees I had read of keeping them in a cellar and of course tried it, but soon learned there were some difficulties in cellar wintering. I read in Quinby's book how to make straw hives, which had a good reputation for wintering bees, and made some; but they were clumsy affairs.

Early Experiments in Winter Packing

It was in the fall of 1871, I believe, that I tried winter packing. I had some twenty or more single-walled Langstroth hives. I removed the honey-board from six in the fall and covered the frames with cloth and three inches of pulled wool, and replaced the cap. All my other hives were put into the cellar. The six left out of doors came through in good shape.

Ah, ha! I had made sure in my mind the secret of successful wintering. It was to keep the bees warm and dry. If bees wintered well with good insulating material on top of the frames, how much better if packed at the sides?

A year or two before I had made some large double-walled hives for side storing, after Quinby's patterns. Why not use these for packing? But wool was quite too expensive to use a large amount of it. Why not use sawdust? If sawdust would keep ice from melting, surely it would keep the bees warm.

Various Kinds of Packing Material

I tried it and it worked; but sawdust had a bad way of running through any crack or crevice into the brood-chamber. If bees gnawed a hole through the cloth over frames, the sawdust would run down into cells of honey or brood, very much to my disgust; also it would sometimes hold moisture, which was an objection.

I tried chaff, but it often contained thistles and the mice found it a good place to search for food. I have some-

times used leaves, which work very well, especially after the first year, when they break up and are very good. But, everything considered, we have found soft fine planer shavings the best or most practical. If none of these are at hand, old rags may be used, or old newspapers crumpled up and packed in. The particular brand of politics the paper carries does not matter. One or two layers of "Celotex" might answer every purpose, if placed on the outside of brood-chambers.

Protecting Part or All Sides of Hives

I began, first, packing on top of frames, then on top and sides; a little later, on top, sides, and ends; and, as I learned the value of it, on top, sides, ends, and bottom. I learned that it all pays. If colonies are very small it pays even with double-walled hives to reduce the size of brood-chamber on the principle that a small stove can keep only a small room warm enough. I have many times wintered colonies on four Langstroth frames by careful packing and reducing the brood-chamber to the size of the colony.

Advantages of Built-in Packing

The advantages of double-walled hives are many. With them we can easily secure warmth and freedom from excessive moisture. During the fall they protect the colony from sudden changes of temperature. The same is true in winter. We may have warm days when the bees spread themselves over the combs, followed by a sudden cold snap. If the bees are in a single-walled hive, many get caught on the outside of combs away from the cluster and are chilled to death or die of starvation, while if they had been in a well-packed double-walled hive the change of temperature inside would have been so gradual that the outside bees would have had time to join the cluster and thus save their lives.

Being warmer during winter in such hives, the bees consume less honey, exercise less in the cluster to keep warm, and so live longer.

In a double-walled hive bees can spread their brood much faster, simply because it is warmer. We had on the 15th of last March combs filled almost solid with brood from top to bottom and from end to end.

We find, as a rule, much more brood in a double than in a single-walled hive during the early spring, and it is these this year's bees that count in getting ready for the harvest. Brood does not so easily get chilled during frosty nights during our changeable weather. A double-walled hive in summer keeps the temperature more nearly even and protects the brood-chamber from excessive heat.

J. E. Crane in one of his apiaries of double-walled hives.

Advantages of Winter Cases

With all their advantages, large double-walled hives are not perfect, but have some serious objections. They are large, heavy, clumsy, and difficult for one man to handle, or to transport from one place to another. They are poorly adapted to modern methods of tiering up, and better adapted to securing comb than extracted honey. Another objection is the extra cost, which is nearly double that of single-walled hives. If I were starting anew

with the experience of more than fifty years with double-walled hives, I am not sure but that I should prefer special winter cases. These will give perfect winter protection, and after the cold weather has passed the hives can be set on their summer stands, when we have all of the conveniences of single-walled hives.

Where cellar conditions are perfect one can get along very well without the extra expense of double-walled hives; but I have never had such a cellar, and there are doubtless many other beekeepers situated as I am, who will appreciate the protection that winter packing gives.

Most of the commercial beekeepers of western Vermont have adopted the double-walled hive with very satisfactory results.

Middlebury, Vt.

STRAIN OF IMMUNE BEES

By Bruce Lineburg

Professor of Biology, Lake Forest College

The Discovery of Colonies which are Apparently Immune to American Foul Brood

During the present summer (1925) the writer has been studying foul brood in an apiary which consisted of twenty-nine colonies the previous summer. Some American foul brood was present in the apiary at the time it was packed for winter—the owner disclaiming knowledge of the disease, however. Ten other colonies, brought in by a neighbor, were packed with these bees. Some of the latter were badly infected with American foul brood, as was shown by examination the following spring. This owner also denied knowledge of the disease.

During the warm days of early spring a general robbing occurred. A number of infected colonies had died during the winter and these were robbed out. One of the colonies had an extra hive body and a shallow super well filled with honey, all of which was removed by the robbers. The robbing had gone on for several weeks before the owner, who had moved to Chicago, returned to look after his bees—to locate the dead colonies and to close their entrances or otherwise dispose of them. It is probable that each of the colonies surviving the winter took part in the robbing of the six or eight dead colonies.

Shortly after the robbing occurred the writer began work in the apiary. Affairs were in a sorry state and it seemed likely that all of the colonies would become infected. These expectations were practically realized, for by the middle of May all but one colony of the original apiary were dead or infected with foul brood. Two of the ten which were brought in by the neighbor showed no signs of foul brood when last examined about July 1. The other eight either died or showed foul brood in April or May.

The fact that three of the thirty-nine colonies did not contract the disease, being equally exposed with the rest, should have attracted attention at the time, but it did not. We were glad that three of the colonies had escaped and let the matter go at that. It was perhaps a month later that the inconsistency of the three colonies was brought home, and then only after the thought of immunity had been brought out by other observations.

Bees Remove Dried-Down Scales of American Foul Brood

In one colony the spread of the disease was so slow that after several cycles of brood had developed only a few infected cells were to be seen. A germicide was then injected into some of these cells and their locations marked. These cells were examined from time to time during the following weeks. Other infected cells on the same combs were watched also and soon it became apparent that bees were removing the dried-down larvae which had died of American foul brood. So well did these bees do their work that this particular colony built up to good strength, gathered a fair crop of honey, and at present (September 10) is in fair condition, aside from the fact that it has not been able to rid itself of the disease.

Other colonies were then examined to note the progress of the disease. In several cases the disease rapidly overwhelmed them; in others the disease progressed but slowly. In a number of hives the disease appeared to be at a standstill; while of those which showed infection in the spring, two apparently cleaned up the disease. These two, together with the one from the original apiary which did not contract the disease, were divided and used for making increase in June and July. These have remained free from disease to the present.

Consideration of the facts as stated led to the conclusion that the three colonies which escaped the disease must have done so through immunity to the disease. All colonies had equal opportunity to secure infected honey from the dead colonies. All colonies securing the infect-

ed honey should have exhibited disease of equal virulence, unless there were a difference in the resistive powers of the different colonies. That there was a difference in such resistive powers has already been set forth; namely, two threw off the disease after it had been contracted, several colonies had but mild attacks, and some were overcome by the disease.

Evidence That Immunity is Inheritable

Further consideration brought out the possibility that the resistance to the disease was probably inheritable. Most of the thirty-nine colonies were from the same stock, since the neighbor had secured a part of his bees from the apiary in question. If resistance to the disease is inheritable it would be likely that certain of the colonies would show differences in powers of resistance in case there were progeny of an immune strain in the apiary. Progeny from inbreeding of the immune strain probably would be immune; progeny of the immune strain crossed with susceptible strains probably would be less resistant; while ordinary strains, which are susceptible, would show still less resistance and would eventually be overcome by the disease. The observed facts fitted well with this reasoning and suggested at once that the matter of inheritance should be tried out.

A queen reared from one of the colonies which had not contracted the disease was used for the first experiments. After a fair colony had been established by her—her own progeny forming all or nearly all of the colony—a comb containing scales of foul brood, pollen, and considerable honey was taken from an infected hive and placed in a three-frame hive. The queen and two frames containing eggs, brood, and bees were taken from her hive and placed in the nucleus hive with the infected comb, the purpose of this experiment being to see whether this queen of the second generation, together with her progeny, could clean up the infected comb without contracting the disease. The nucleus hive was used because it could be disinfected more readily than a ten-frame hive. Its use, however, brought about a condition which had not previously been thought of; namely, that the reduction in numbers of the colony made it necessary for them to draw rapidly on their stores, with the result that all of the honey, approximately two pounds, was removed from the infected comb and fed to the larvae in ten days. These larvae grew to maturity and were capped over apparently none the worse for the infected food. No foul brood has appeared in this hive to date.

Three queens were then reared from the queen used in the above experiment. These are now at the head of colonies. Two of them are in hives in which were placed combs containing larvae dead of foul brood, also pollen and honey gathered by a colony while infected with American foul brood. These queens were introduced in hives containing eggs, brood, and bees from their mother's hive. The honey and pollen from the infected combs were used by the bees; and although even the eggs have now developed past the stage when they are capped over no foul brood has been observed.

These experiments constitute in reality three tests of the queen of the second generation in which her larvae (third generation) were exposed to foul brood throughout the period of feeding; yet in none of them did foul brood develop.

Breeding an Immune Strain of Bees

The queens of the third generation had not begun to lay when last examined, and the remainder of the active season will be required to make tests of their progeny. What these results will be can not be foretold. These larvae (fourth generation) may or may not be immune to foul brood. Failure to show immunity to the disease would not prove that immunity to American foul brood is not inheritable. It would not prove that immunity may not be inheritable in the strain being worked with. In case resistance is lacking in the fourth generation it may mean that the mothers have mated with non-resistant stock. In that case it would necessitate going back to the grandmother or great-grandmother and breeding drones as well as queens.

A warning should be given to those who, because of these experiments, might be induced to be less careful in their treatment of American foul brood. Doubtless there are in the United States a considerable number of colonies immune to foul brood, but the chances of a given beekeeper having a resistant strain are too small to be considered from a practical standpoint. The writer believes that in time a strain of bees may be found which are immune to American foul brood; but such a strain has not yet been fully demonstrated. After seeing many apiaries completely wiped out by American foul brood, the writer is of the opinion that, for the present, the best treatment for the disease is fire, boiling lye, or formalin.

Lake Forest, Ill..

[This problem can well be left to experts, for great care will be necessary in those cases in which it is difficult to distinguish between this disease and European foul brood. A laboratory examination is the only sure test in some cases.—Editor.]

GREATER PUBLICITY FOR HONEY

By Leslie Burr

How Articles on Bees and Honey Should Be Prepared for Local Newspapers

Any matter pertaining to bees and honey, intended for publication in a beekeepers' local newspaper, should have news value and be timely. If it has those features it stands a good chance of being published. Just what kind of facts can be said to have news value? In the spring, the fact as to whether bees have wintered well or not, is news. To make a good story, however, the fact that bees have or have not wintered well should be supplemented by some additional facts or comments concerning bees and honey, crop prospects, or facts concerning the honey crop of the past season. The average person is quite ignorant concerning the amount of honey produced in the United States, or the amount used by the baking companies, and such facts are news.

During fruit bloom, the fact that the bees are or are not working on the bloom is news. When weather conditions are such as to prevent the bees from visiting the fruit blossoms, this is occasion for comments on the probable effect on the fruit crop.

Then there is also the matter of spraying fruit trees. To give an idea as to how much value the newspapers may put upon such facts as a beekeeper may be able to furnish, I will tell of an instance that occurred in Colorado during 1909.

I arrived at Berthoud, Colorado, in the spring of that year, and found a controversy on in the newspapers between certain beekeepers and the horticulturist for that district. I think the horticulturist's name was Mosby. He had issued an order to the fruit-growers to spray their fruit as it came into bloom. This had been objected to by certain beekeepers. Mosby had what might be described as a fluent pen, while the beekeepers seemed to be tongued-tied when it came to expressing their thoughts in print. The result was that the horticulturist made the beekeepers and their objections appear ridiculous.

When the situation was explained to me I got a copy of A B C and X Y Z of Bee Culture and read everything therein pertaining to fruit spraying and pollination. I also visited the office of a lawyer and read the statute passed by the Colorado legislature, regulating the spraying of fruit trees, and found that the spraying orders issued by the horticulturist were contrary to law. I then wrote an article that handled the horticulturist without gloves, gave a column or more of facts concerning bees, honey, and fruit pollination, and ended by citing the law which the horticulturist had ordered the fruit growers to violate. I took the article to the editor of the Ft. Collins Express, a daily newspaper published at Ft. Collins. He thought enough of it so that he made it the feature story the next day, giving it the first column and headlines that reached across the page, printing what I had to say in the form of an interview. The result was that a few hours after the newspaper was off the press the horticulturist was trying to make peace with the beekeepers—and that particular controversy was ended.

Publicity Concerning Fair Exhibits

When bee and honey exhibits are made at a fair there is generally an opportunity to get additional publicity in the newspapers. Almost without exception newspapers stand ready to give considerable space to help the fair. A well-conducted fair generally has a publicity man, or it may be that a man is detailed from some newspaper, and it is with this publicity man that the exhibitors should work.

The last time I made an exhibit at a fair I furnished the publicity man with several copies of the write-up concerning my exhibit, and he placed these with various newspapers. The write-up I furnished had as a heading, "Queen is Shown at Her Household Work During Maui's Fair." Then followed a description of the exhibit; some general facts about honey; the part the bees play in nature by fertilizing blossoms of fruit trees; the chemical nature of honey and how it differs from cane sugar, etc.

The End of the Honey Season

The end of the honey season is one of the best times to get newspaper publicity. Crop reports are always a matter of news. Such reports should, in addition to stating the amount of honey harvested, have some additional matter, such as cost of production and comments showing that the popular idea that "bees work for nothing and board themselves" is an error.

In addition to the instance mentioned there are many occurrences that have sufficient news value to merit publication. For example, the year 1924 was one of the driest in the history of California, and as a result of conditions in the mountains here in northern California, Ben Mast, a young man that I am helping to become a practical beekeeper, had to move a yard of bees. This was news,

and so the facts were written up and published by the local newspaper.

Why Educating Public Concerning Honey is Necessary

Eating honey is a matter of habit. For those who do not like the term "habit" we may say it is a matter of education. In fact, about every act the average person performs is influenced more or less by education. The mind of the new-born infant is a blank page, to be written upon as long as life and intelligence shall last. For example, the child of a Boston missionary, if reared in a Chinese family and away from all white people and their influence, would grow up on a diet of rice, eat with chop sticks, and become a disciple of Confucius, for the reason that the average person is a good imitator and has but few original ideas. This is proven by a brief glance back over the history of the human race. For example, the buttons with which we fasten our clothing are but an invention of yesterday, when the age of man is considered. Untold millions of people had to be born, live, and die before the button was thought of. In the matter of heating our houses, man shivered by an open fireplace for untold generations waiting for Benjamin Franklin to invent a stove. And if it had not been for James Watt and a few other original investigators we might still be traveling in oxcarts and reading by candle-light. Now, however, scientific investigation has become a habit.

But before man acquired the habit of investigation progress was slow. For example, our great-grandparents knew tomatoes by the name of "love apples," and considered them poisonous. Our grandparents considered grapefruit unfit for food—and our parents are still making wry faces over them. As to the present generation—well, if the beekeeper wants to get a good price for his honey he must get more people in the habit of eating it.

The fact that the average person has not the honey-eating habit is not strange. In view of the fact that the honeybee has been subdued and made a servant of mankind within the lifetime of people now living, I consider that good progress has been made in getting the people to eat honey. I do not know how much honey was placed on the market a century ago, but I venture the assertion that during the present year the markets of the world will have disposed of more honey than was marketed in all the years between the days of Adam and Eve and Moses Quinby. So, all things considered, perhaps the beekeepers of today have little cause to complain of the progress made in educating the public.

Paid Advertising

I do not want to convey the idea that I advocate that beekeepers should not use the advertising columns of newspapers. If matter is straight advertising it will never get into the news columns—that is, not if the editor knows his business; and no beekeeper should ask a newspaper to publish advertising in its news columns.

The fact that a beekeeper harvested a big crop of clover honey is news, and the fact should be published as news; but the fact that clover honey can be bought at the local grocery or at the beekeeper's residence at so much per pound is advertising. Don't ask a newspaper to publish such facts without being paid.

Willits, Calif.

THE RACES OF BEES

By Phillip J. Baldensperger

The Various Races found in Europe and the Outstanding Characteristics of Each

Apis mellifica, var. *lehzeni*, v. Buttel-Reepen (1906). An able bee-book written by H. Lehzen, in honor of whom the adjective "lehzeni" was given, describes this bee as different from the brown bees just described. This author, who has kept the heather bee in the heather regions of Luneburg especially (though she extends all along up to Holland), says: "This bee is a product of the German bee, and has been differentiated by many centuries of breeding into the actual race—that is to say, a very diligent, hardened bee, and one of great swarming propensities." The bees swarm two to five times a year, and a first swarm usually swarms again in good seasons. Swarming may even go on with second swarms. The heather bee begins brood-rearing early in the year, and continues late in the fall. V. Buttel-Reepen says: "The bee is an outcome of natural breeding, and has not been produced by beekeepers in their selection. Their swarming propensities are so great that a single stock has gone up to an increase of fourteen in the same year in specially good seasons. They liberally build drone comb, and second swarms build drone comb in the first year which are readily utilized by the young queens."

When the Germans, after the Great War, had to furnish a number of colonies of bees to France and Belgium they delivered numbers of heather bees. Mr. Tombu, permanent secretary of the International Beekeepers' Congress, and the Belgian delegate at the meeting of that congress in Quebec in 1924, who, together with the French beekeeper and professor at Nancy, had to receive the bees in Germany, refused many thousands because of their swarming propensities. He said that when they had received a consignment of bees they set them up in the railway station, and as late as November the bees would swarm and cluster about the railway poles. This disagreeable feature finally caused them to refuse further shipments of these bees. The French beekeepers mostly complained of having received a very inferior strain of bees, and refused to receive any more of the kind.

The abdominal segments of the heather bee are black, bordered with yellowish fuzz, while on the thorax there is black fuzz. In queens and drones this fuzz is completely black all over. They build up to 50 queen-cells, being an intense swarming race.

No doubt the early Dutch settlers in America brought over this strain of heather bee, which has been an inhabitant of America since 1638. It not only was the companion of the white man, but, on account of its great propensity for swarming, even preceded the white man into the west, and is actually found all over the United States and South America. This accounts for the disagreeable characteristics of the American brown or black bee, which is very aggressive and unstable, running about the hive when disturbed and dropping from the combs when lifted up, indicating that the American black or brown bee is a descendant of the heather bee and not of the better race previously described as the brown European bee.

When the British Isles were almost completely swept clear of its bees as a consequence of the great bee plague known in 1904 as the Isle of Wight disease, heather bees from Holland were brought over. These did not prove satisfactory, but this was a good way of filling the gap and receiving Italian queens, which have taken the place of the old English bee; but to what extent is not now known.

Campine bees living in the heather regions of Holland, as well as the northern bees of the Scandinavian regions, are very likely of the same race, though possibly somewhat modified by their isolation. The introduction of foreign races, which is going on there, will also completely eliminate the pure strain.

The Carniolan Bee

Apis mellifica, var. *carnica*, Pollmann (1889). The grayish Carniolan, also called Noric, is a race found in Carinthia, Carniola, and in modern Jugo-Slovakia down to Dalmatia, with slight differences in color toward the Banat, but is found in its purest type in Carniola, where Ambrozic, the renowned queen-breeder at Laibach, raised them in the 70's and 80's of the last century. On account of their gentler temperament than the browns, they have been largely imported into Germany, and also by Benton to America in the early 80's of the last century, where they have been mixed to some extent with the original brown bees. In Alsatia most beekeepers have Carniolan bees, and consider them to be very good honey-producers. The segments of the abdomen are black, bounded by a grayish ring covered with a whitish fuzz by which, when pure, they can easily be distinguished from brown bees.

They are very good breeders, as they have inhabited countries with early and late honey-producing plants. On account of the low hives utilized in their native country they swarm readily, exaggerating the swarming to such an extent that they sometimes completely deplete their hives. The bee-owners of Carniola have been in the habit of carrying their hives on their shoulders to the heather regions up the rugged mountain paths, which was an excuse for them to keep their bees in low and light hives. The bees carry on breeding late in summer, spending a considerable amount of their winter stores while doing so. This undesirable quality may, however, be reduced by selection.

The author's experience with the Carniolans of Laibach proved them one of the best races for producing comb honey; but because they are very mild-tempered they are not adapted to any country where ants, wasps, hornets, or the like abound, as they are poor defenders of their homes.

The Hymettus Bee

Apis mellifica, var. *cecropia*, Kiesenwetter (1860). The Grecian bee is simply a hybrid between dark northern bees and probably imported Cyprians. The name "Cecropio," given in 1860, is due to the supposition that some settlers, led from Egypt to Greece by Cecrops, brought the bees to Greece. Benton, who lived for some time in Athens, where he received the Cyprian, Syrian, and Palestinian bees, did not consider them worth while, and used some colonies only to receive the queens coming in from the near east.

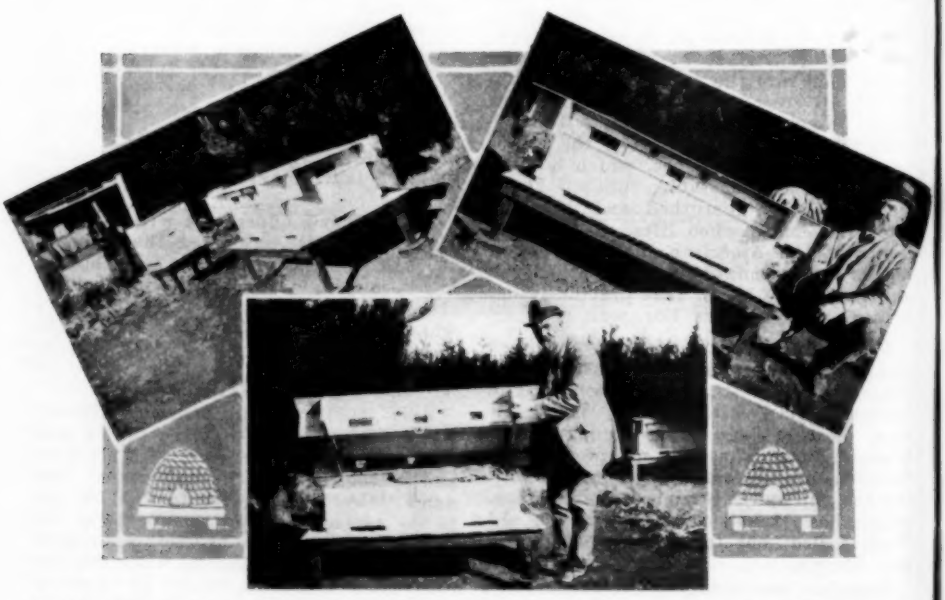
The Anatolian Bee

Apis mellifica, var. *insularium*, Buttel-Reepen. Like the Grecian bee, the Anatolian varies from dark to yellow as it may be nearer the coast or further inland. Buttel-Reepen gives it the name of "insularium," because the bee was brought from Syra, Rhodes, or from Smyrna.

Emile Baldensperger, who passed three years in Turkish captivity about Coniah, in central Anatolia, or Asia Minor, had an occasion to see a swarm of dark bees and dark bees in hives; but on account of his situation as a prisoner of war from 1916 to 1918 he could not study the bee more intimately, except that he said he handled them without being stung on one single occasion.

The Caucasian Bee

Apis mellifica, var. *remipes*, Pallas (1862). The Caucasian bees vary greatly in color. Some are dark and some bright yellow, according to their origin. They are yellowish from the regions of Vladikavkas. Butlerov was the first scientific beekeeper to call the attention of the beekeeping world to them in 1877. Through German beekeepers in the same region some yellow Caucasians were sent to Jaffa, Palestine, in 1881; but very soon they were hybridized with the yellow Palestinians. Some were sent over to America as early as 1880. Dathe, in his Asiatic journey in 1883, brought some Caucasian bees of the darker color with him to Germany, but they were given up for many reasons, among which was the difficulty of transportation. The author received dark as well as yellow Caucasians in southern France about 1904 or 1905; but the bees of either of the two strains were very inferior honey-gatherers, and since European and American foul brood were there they soon fell victims to the dread diseases. They are universally noted for their gentle disposition, but are judged a great swarming race by some, and a very poor swarming race by others—facts which, along with the various descriptions of coloring, show that they vary according to origin. As they are found on both sides of the Caucasus Mountains they may be called a mingled race of bees, taking their journey northward from Hindoostan, through Persia, or else a mixture of the Syrian and Asia Minor bees, meeting at the end of the Taurus Range and following the mountains of Armenia and around Ararat.



Double hive as used by Martin Mulder, Johannesburg, South Africa. The hive is similar to the "long idea" hive, but it has two entrances and is arranged for two colonies. At each end is a brood apartment which is partitioned off by means of a queen-excluder, the combs for surplus honey being between. The two colonies, therefore, work together in the storage apartment. The hive, therefore, employs the principle of side storing instead of top storing as in the ordinary hives used in this country.

FROM THE FIELD OF EXPERIENCE

WANTED—A HONEY MARKET

One That Will Take All Honey Offered and Bid for More

It is often stated that the producer of agricultural products is about the only one who can not fix the price for the stuff he markets. But is this really true? The retailer, who, we say, has the privilege of asking what we must pay, surely must have the constant competition of the fellows who undersell him. This is much the present condition in the marketing of honey, and the cause of considerable howling on the part of beekeepers who figure they know how much they must have for their products.

Let us consider how the main farm crops are sold by the producer. First, let us suppose we had a carload of live stock or corn. We could, by developing a fancy trade, sell it direct to consumers at a high price; but there would be very few farmers who would do this, so we must turn to the open market. Nearly every city in the country has some place where firms in the business are willing to bid as to what they will pay for our products. That puts us in a more favorable situation with a carload of farm produce than the position of the retailer who has the competition of the price-cutter.. There is almost no sign of any primary market that will consume all the honey shipped there and make a standing bid for more, with higher bids for better grades.

The production of honey would be only begun if we had a merchandising system throughout the country that would buy all the honey offered, as is now done with butter, eggs, and poultry. I know that one can today sell immense quantities of honey if he will make the right price to bottlers; yet I am unable to tell my fellow beekeeper where he may ship his honey, as we would a carload of live stock, to some regular market, and know in advance just about what the trade will bid for it.

Another point that might show up the possibilities of the honey industry would be to consider the meat-packing industry. How many live-stock growers would be able to sell their own meat products profitably if they had to hunt their own retail markets? Yet in the selling of honey this has to be done.

This condition can be brought about by proper advertising of honey and getting a primary market developed somewhere in the country that will take all the honey shipped in and bid for more. Of course, the price would most likely have to compete with sugar and very likely it would have to be below that of sugar for a year or two; but the effect of this would be incalculable as to the results it would produce in offering an inducement for development by the trade. This was proven when only a few years ago the price of corn dropped to around 30 cents a bushel, thus giving many manufacturers an opportunity to develop corn products, the result being that its use has been increased many times.

When a regular market has been developed the same condition will prevail in many places that we have in this section of the country with our grain. It is impossible to buy grain below the market price, and many feeders, in order to get all they want, have to bid several cents above the prevailing market price. That is just the opposite of the honey market, isn't it?

What the beekeeping industry needs today is a primary market that will give a stated price on all the honey shipped it and bid a premium on special grades—some such spread of prices as there is between common and market-topping live stock.

O. E. Timm.

Bennington, Neb.

PACKING MANY HIVES TOGETHER

How Trouble from Drifting When Packing and Unpacking is Avoided

The method of wintering that I use is one that I have tried six years with uniform success. It costs nothing but a few hours' labor. On the east side of a building (I would prefer a south side if convenient) I have stacked the hives "row on row," five tiers deep and eleven long, facing eastward. I first laid a floor support a few inches above ground, beneath which is packed dry litter to exclude draughts and dampness. Then dirt is banked up flush with the lower hive entrances for drainage.

On top of the first tier of hives, loose litter was strewn freely before the second was added; likewise on each tier successively. The top tier is buried several inches with leaves, sloping upward, then a heavy layer of rugs, bags, canvas, and (over all) heavy oilcloth. All this was waste material saved up as I found it.

Next I packed between hives with rags, hair from mattresses and old cushions, punched in tight with a screwdriver until the fronts were well fixed to ex-

clude wind and dampness between. For the roof, old boards are tacked to the building at the top ends, and rest on the packing below, with the lower ends nailed to a 2 x 6 running the whole shed length. This timber drops partly below the hive fronts and a narrow board closes the space below it and against the middle of the top hives, like a brow. The space behind is packed.

The north end of this improvised shed is protected by another old shed for a few feet and the sides of the hives at the south end are well padded with cloth material—anything I could pick up for this purpose.

The hive entrances are open all winter, but narrowed with rags stuffed in part way, to be removed for raking out accumulations, if any, during cold spells. The hives dip forward an inch or so, to help the bees clean house and to drain out water.

I was asked about bees which might try to return to the old locations. A few will fly back on the first opportunity and hunt during the day for their home, but at night all return to their hives or to some hives in the pack. None are lost. The hives are moved, of course, when no bees are flying, any time after cool weather begins. I have had no losses whatever by reason of bees going into the wrong hives, and I doubt if many err. They fly out and around the entrances until guided back by odors or some instinct. I have not had a single case of robbing while so packed. The advantages of winter flights are too well known to be discussed.

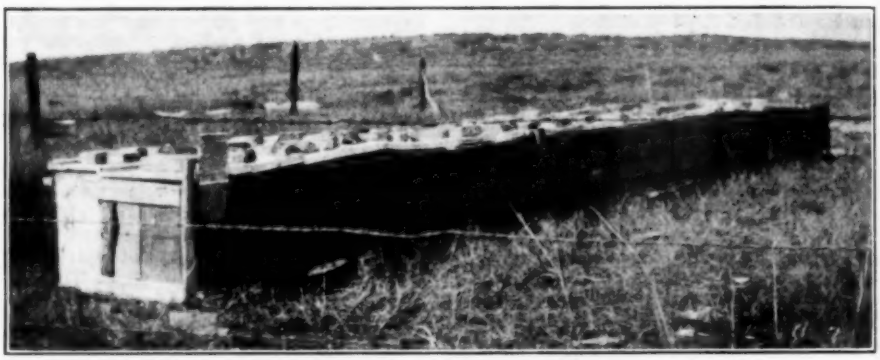
In early spring I move the hives back to their summer stands, leaving a few weaker colonies for a day or two to catch the drift. Last winter I left one alone, having only a queen and a hundred bees. It built up quickly with drifting bees until it was strong and made a good record last season. But if too few—that is, not over three or four colonies—are left at the first general removal, the drift may concentrate on one hive too rapidly and destroy the queen. But this is rare.

Viborg, S. D. I. W. Cameron.

WINTER PROTECTION IN COLORADO

Colonies Protect One Another on Three Sides by Grouping in Double Rows

I pack my bees in double rows, one row facing east and one west. They are put close together, back to back, and first covered with tarred paper, then panels of lumber are put on the sides,



Eighty colonies grouped together in a double row, then packed in tarred paper and panels of lumber. The hives are set close together so that, except at the ends of the row, each hive is protected on both sides and at the back by adjacent hives.

and the regular hive covers on top. Years ago I used tarred paper only, but found that it warms up the hives too much early in spring and makes the bees too active, so now I use lumber in long panels on the outside of the tarred paper. This helps as a windbreak, and also protects the tarred paper so I can use it several years. When I used only tarred paper I packed the hives in single rows with every other one facing east. That kept the entrances farther apart and helped some to keep the bees from mixing when they had their winter flights; but it took too much lumber to cover them that way, so now I use double rows and it works all right. It does not cost much to cover and protect a lot of bees this way. I think it will average between ten and fifteen cents per colony.

I leave the protection in place until the first of May, when I set them out. The hives are painted white, which seems to cause them to stick to their new location; but I leave a few of the weakest

ones in the old row to catch any stray bees, so that none are lost. The bees cluster in the upper story, where it is warmer. In the lower story there is some light honey which the bees carry up in spring. That helps by stimulating brood-rearing.

The openings for the entrances are down next to the ground, but it never gets very cold here as long as there is no snow, and as soon as it comes that lower space is closed with snow, which keeps out the wind. Sometimes it drifts so that the whole row is half under, but I leave them alone until warm weather, when I sometimes dig the snow away.

I have a stick nailed over the entrance with some course wire screen on about 1½ inches at one end to let the bees pass through and keep the mice out. I have no worry about the bees all winter and can go to live in another country if I wish. I don't have to feed and water and do chores with them every day as is necessary with all other animals.

Brush, Colo. Daniel Danielsen.

MEASURING FOOD VALUES

Why Honey Is Better Than Highly Refined Manufactured Food Products

The calorimeter test of food products is all right as far as it goes if several other factors are taken into consideration with it; but to imply that corn syrup is just as valuable a food as honey because they both happen to give about the same heat value by calorimeter test, and without taking into consideration digestibility, flavor, mineral salts, or vitamines, is to ignore entirely many of the essential requirements of a really good food.

In this day and age comparatively few men claiming to be either chemists or physicians deny the value of certain mineral elements in foods so essential for the growth and healthy maintenance of animal life.

Every chemist knows that the bony frame of man is made up to a large extent of calcium and phosphorus. If these two elements were entirely absent from his foods he would cease to grow and soon die. If his foods contain some calcium and phosphorus but not enough to satisfy all requirements, his skeleton is weakened, he is likely to lose his teeth through decay, and his general health suffers. This is exactly the state of affairs with millions of Americans at the present time. They have eaten the whitest of white bread and cake, polished rice, white sugar, corn syrup, candy, and soft drinks, until it keeps an army of dentists and physicians busy patching up their partially starved frames. Yet the above-mentioned articles of food contain as many or more heat units, or calories, as whole-wheat bread, graham bread, unpolished rice, oatmeal, honey, brown sugar, cane molasses, fruits, and vegetables; but the latter articles contain more mineral salts and vitamines, and have by experience proven to be more wholesome foods.

Years before vitamines were dreamed of, and before anything was known regarding the chemical composition of foods, good farmers knew that pigs grow faster when fed on wheat middlings than when fed on corn or cornmeal; but they did not then know why. We have since discovered that the outer portions and the germ of wheat are especially rich in mineral salts and vitamines so essential to the rapid healthy growth of animal life. The physiological effect of such artificial sweets as corn syrup and saccharine has never been so wholesome as that of the natural sweets, fruit sugars and honey. The moral seems to be, "Live close to nature." A. N. Clark.

Charlotte, Mich.

THE MICHIGAN FIELD MEETINGS

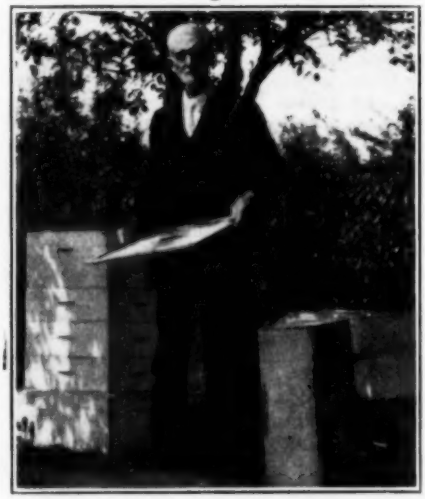
Changing Conditions Resulting from Extensive Cultivation of Sweet Clover and Alfalfa

When I was invited to attend the county field meetings in southeastern Michigan and the state meeting at East Jordan, I at first feared that some of these meetings might seem more like funerals —ceremonies attending the burial of spring hopes and anticipations of a honey crop. Fortunately, however, late rains came on and revived the clover enough so that in most localities in the southeastern part of the state a partial crop was harvested. While the crop could hardly be called more than half of a normal one, yet this was so much better than the prospects indicated in June that no one talked or looked as though attending a funeral. The enthusiasm was good, and splendid interest was maintained at all of the meetings. This speaks well for the patience and perseverance of Michigan producers.

The first meeting was held at the home of L. C. Retan. The group shown in the illustration is typical of the rest of the county meetings. The second meeting was held at the home of Floyd Markham, near Ypsilanti, and the third with Oscar Schmidt, between Saginaw and Bay City. These local meetings do a great amount of good. The almost universal use of the automobile has increas-

ed the size of local field meetings until it is not uncommon to find one attended by one hundred to two hundred beekeepers.

Sweet clover and now alfalfa are beginning to change honey conditions in Michigan very materially. Many loca-



M. H. Hunt, of Redford, Michigan, one of the pioneers in beekeeping in this country, demonstrates that he can still handle bees as well as some of the younger set.

tions where white clover and basswood predominated formerly are now sweet clover locations. Sweet clover in many localities is now being bought for hay and feed very extensively. Alfalfa, while no great factor at present, is coming in quite rapidly and will some day be of considerable importance as a source of honey. Outside of the irrigated districts of the West, alfalfa has never been considered much of a honey plant, although in central New York large crops of honey are sometimes harvested from it. In any new locality—and of course this includes Michigan—alfalfa never yields a large crop for the first few years. Some say that it must be in a locality for at least five years before it begins to yield honey to any great extent. Others believe that alfalfa grown on ground inoculated by sweet clover, being much more luxuriant, yields honey. With sweet clover, and later alfalfa, to supplement the white honey flow, the future for beekeeping in Michigan is very bright.

H. H. Root.

BEEKEEPING IN FICTION

Great Detective of Fiction Pictured as Beekeeper in Series of Short Stories

Beekeepers throughout the world will be interested to learn that the latest recruit to the ranks of the beekeepers is the veteran detective of fiction known as "Sherlock Holmes." It is perhaps a sign of the times, and a tribute to the importance beekeeping has attained, that Sir Arthur Conan Doyle has thought it advisable to make his most popular character turn to beekeeping in his old age.

Holmes appears in this new role in one of a series of short stories published under the title, "His Last Bow," and we are introduced to the beekeeper-detective

Group of beekeepers attending the field meeting held at the home of L. C. Retan, Fairfield, Mich.

in the story which gives the title to the collection.

The time is August 2, 1914, fateful date in the history of the world, and the scene is a quiet country place on the coast of England. The first person of the drama is a certain Von Bork, whose name indicates his nationality. He has gained the confidence of the English by living four years among them and posing as a country squire keenly interested in sport. Meanwhile he has been steadily acquiring information likely to be of use in the forthcoming world struggle.

One of his best agents is an Irish-American named Altamont, who makes use of so much "American language" that Von Bork says he "must have declared war on the king's English as well as on the English king." Altamont is, of course, Holmes in disguise. He is described as a tall gaunt man of sixty, with clear-cut features and a small goatee beard, giving him a general resemblance to the caricatures of Uncle Sam.

On this night of nights Altamont is to bring the most valuable prize of all, a book of naval signals stolen from Portsmouth. For this special exploit he is to receive £500 over and above his regular salary as a German agent. In due course Altamont arrives at the rendezvous in a Ford car driven by "a heavily built, elderly man, with a grey moustache." This latter is, of course, our friend, Dr. Watson.

Altamont refuses to hand over the signal-book till he has "fingered the dough," and Von Bork, equally cautious, keeps a grip on the cheque he has written until he has removed the wrapping from the precious loot. He has hardly time to catch a glimpse of a little blue-covered book, across the cover of which is printed in golden letters, "Practical Handbook of Bee Culture." For Watson was behind him with a chloroformed sponge, and when he recovered consciousness the two friends were busy packing the valuable documents intended for the German high command. Some of these had been furnished by Altamont, and the information contained in them was worse than useless.

Then come the explanations usual in a Sherlock Holmes story. "But you were retired, Holmes. We heard of you as living the life of a hermit, among your books and your bees, on a small farm upon the South Downs."

"Exactly, Watson. Here is the fruit of my leisured ease, the magnum opus of my latter years." He picked up the volume from the table and read out the full title, "Practical Handbook of Bee Culture, with Some Observations Upon the Segregation of the Queen." "Alone I did it. Behold the fruit of pensive nights and laborious days, when I watched the little working gangs, as I once watched the criminal world of London."

The great war is over, and we may be permitted to hope that the famous detective has once more returned to his small farm on the South Downs, and to the study of his bees. Perhaps he may discover the true cause of Isle of Wight disease! John Anderson.

Aberdeen, Scotland.

HONEY FOR AUTO RADIATORS

Serious Trouble When Solution Works Through Gasket into Cylinders

When I first heard about the honey solution as an anti-freeze agent in automobile radiators, it aroused quite an interest and anticipation of increased honey sales. I tried a honey mixture without the alcohol in my Ford radiator, but without very satisfactory results. Last fall I purchased a new Chevrolet car and as everything was new and tight, I decided to try out the honey solution again, especially as I read of the better method of mixing and adding alcohol. So I mixed a gallon of water and ten pounds of honey and then added a quart of alcohol as per the directions given in your journal. This was apparently a great success, as no leaks showed up anywhere on the outside and the solution functioned perfectly even at ten to fifteen degrees below zero. I had become quite enthusiastic over this new mixture and was heartily recommending it.

Later I was brothered with the valves sticking open. I gave them a good oiling and worked them loose only to be bothered again in the same way in a few days. Then the vacuum feed failed to operate and upon examining it I found it gummed up on the inside. I supected that it was honey, as it felt and tasted like honey; but how it could get into the vacuum tank was a mystery to me. Next I took the cylinder head off and found that the solution had been leaking past the gasket and the valves were more or less charred with honey and the cylinder walls showed signs of the honey on them, but luckily had not been scored or damaged. The intake valves in sticking open had allowed the honey solution to be blown back through the suction tube into the vacuum tank, and this accounted for the tank being gummed up and the valves not working properly. So I scraped the charred honey off the valves and ground them, washed out the vacuum tank with hot water, drained all the old honey solution out of the radiator, refilled with water and a gallon of alcohol, paid the gar-

age bill and went home sadder but wiser for this experience.

I have honey to sell but I can not recommend it for radiators. It works beautifully, I must say, as long as it stays in the radiator; but how can anyone know that it is not seeping through on the inside, as it did in my case, and breeding a repair bill? There were no outside evidences to show it, and since the car was new and tight I took it for granted that everything was fine until the valves and feeding device began to give trouble.

Blair, Neb. Leroy F. Baxter.

TEN-COLONY WINTER CASE

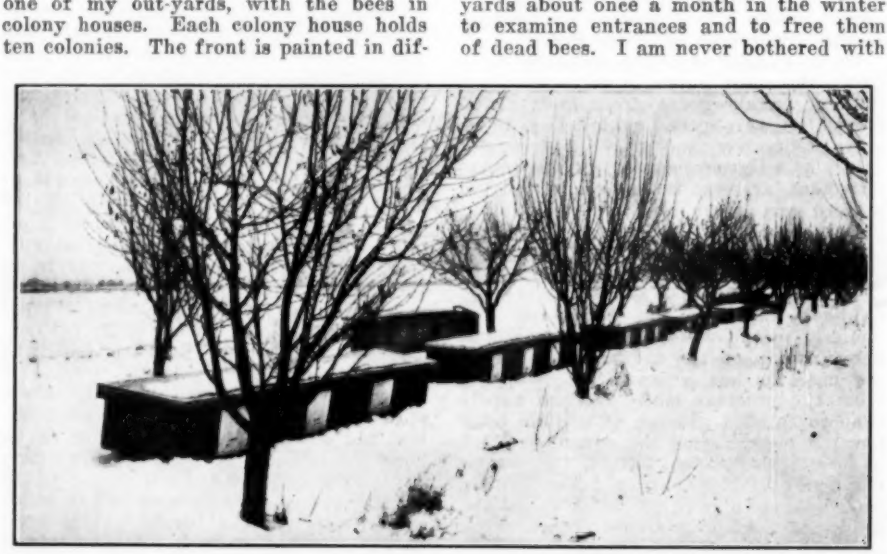
How Drifting Is Avoided When Ten Hives Are Packed Close Together

The accompanying illustration shows one of my out-yards, with the bees in colony houses. Each colony house holds ten colonies. The front is painted in different colors about each entrance, one white, one black, one red, etc. Since bees are very sensitive to color, I have no trouble in drifting when the entrances are painted thus. The insides of these houses are lined at the bottom and back with two-ply roofing. The odor from the roofing has no effect on the bees. We use one-half-inch cleats on the bottom to set the hives on, with a three-inch bridge running full length inside the front to keep chaff from shutting off the entrance.

After the honey flow is over, and at about the time of the last of brood-rearing in October, a very careful inspection is made to see that no diseased colony goes into winter packing. Then after the last of November when the bees cease to fly for eight or ten days, I begin to pack. I take off the bottom and the cover, put a piece of canvas, cut the size of the hive, on top, then set the hive into the colony-house.

For packing I use chaff only, tamping it down solid with a stick. I put three inches of solid chaff all around the sides and six inches on top, then put on the long cover. Since mice will sometimes squeeze in, I make up one part arsenic to nine parts wheat flour and put one-half pint of the mixture in a pie tin which I place under the cover. No mouse will ramble there long when this is done.

Some may think these colony houses are too heavy to handle, but when empty and without cover two men will pick one up and load it endwise onto a truck without difficulty. I make our rounds to the yards about once a month in the winter to examine entrances and to free them of dead bees. I am never bothered with ice clogging the entrances, as with just the canvas and six inches of chaff over the frames the moisture takes care of itself.



Ten-colony winter cases in an out-apiary of M. A. Spangler, Tremonton, Utah. Fronts of cases are painted different colors to prevent drifting.

While there are a good many who keep bees during the honey flow and then leave them to keep themselves the rest of the year, I for one keep bees all the year around. I am just as much interested in the welfare of my bees in January as in any other month.

The winters are not very severe here. March and April are the worst months, when one week will be warm and nice and the next cold and snowing. Bees usually commence brood-rearing March 1 to 15.

It is not uncommon to hear of 40 per cent losses from yards having single-walled hives when left on their summer stands.

Tremonton, Utah. N. T. Spangler.

BEES AMONG THE BULRUSHES

The Honey-Makers Add Interest to Life in a Monotonous Marsh Land

Where the Sacramento Short Line crosses one of the sloughs down in the tule lands of the Sacramento river, an operator of the drawbridge has demonstrated that he has a keen ear. When opportunity knocked, he recognized it.

For many miles above its mouth the river is divided and flows through several channels; the two main ones empty into Suisun Bay, one at the north end and one at the south end. The sloughs, as they are called in California, are connected by canals, making a series of islands. The unusual richness of the soil makes it possible for the owners to grow hundreds of tons of potatoes and asparagus on this land.

Both sloughs and canals are navigable so that boats are able to call at the many landings to transport the produce to the city markets. This makes necessary a lot of drawbridges. Possibly the bridges do not need to be turned more than a few times each day, but some one must be there all of the time.

The first time I traveled over the Short Line I noticed several colonies of bees on a little dyke at the end of the bridge. Here is a man, I thought, who has grasped the possibilities of an avocation to fill his spare time. Each week-end after that when I looked out of the car window at these bee hives I felt curious. One Saturday I decided to stop over between trains to get an interview with this bridge-tender in the tule land. When I asked the conductor to let me off at Dutton (a little flag station), saying that I wanted to take some pictures, he amazedly asked, "What can you photograph in that God-forsaken marsh land?" How little we know about the things we daily see!

Apiaries are often found in strange places. This one is far from any human habitation on the marsh land of the Sacramento river.

When the train pulled away and left me standing there alone with nothing in

The bridge-tender in tule land, who finds time between boats to take care of his little apiary located on the lowlands of the Sacramento river.

sight but the bridge, and the fast disappearing train a tiny speck in the distance, I thought what a wonderful thing it is to behold space. Life in a place like that could have its rewards.

I turned and walked down the track for several hundred feet over the marsh land on the trestle to the bridge. Going straight to the little pilot house of the bridge-tender I expected to find some philosophical old fellow from a foreign land. It added interest to the interview to find an enthusiastic young American boy who wanted to work in the open and in order to do so combined beekeeping with bridge-keeping. Like all "bee bugs," I was glad when this splendid young man said that the bees brought him two kinds of interest.

I wonder if, after all, there are any God-forsaken places, or if it is just our lack of perspective that fails to focus opportunities. R. Beatrice Lane.

San Francisco, Calif.

RAPID DEVELOPMENT IN SOUTH

Work of Extension Workers in Eliminating Box Hives and Black Bees

In the extensive bee-extension work now being carried on by the state, North Carolina is perhaps the most fertile field in the country. C. L. Sams, who was assigned to this territory a few years ago, has a man's job and is perhaps accomplishing more for the advancement of beekeeping than any other man in America.

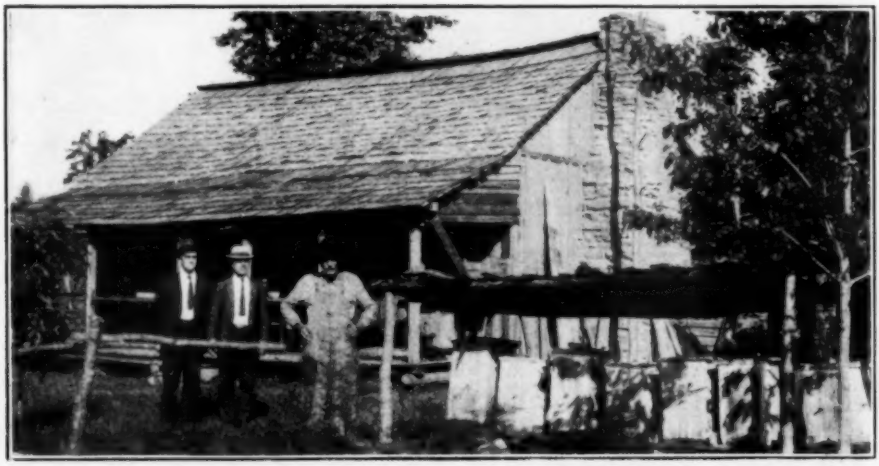
The accompanying illustrations show what faces Mr. Sams on every turn—apiaries of logs, boxes, nail-kegs, and every conceivable container, and in addition mean, black wild bees mostly from stock captured from bee-trees.

When Mr. Sams visits these beekeepers he always gets a warning that the

C. L. Sams tackling one of his daily jobs. He knows how and where to start on such transferring jobs.

bees are so mean that they can not be handled. This warning has become so common that he has developed a special smile to greet this remark. Well, they are mean—there is no doubt about that; but apparently the meaner they are, the better Mr. Sams likes them; and the amazement of the owners as he turns the gums upside down and looks into them and dumps piles of the bees "which can not be handled" into new hives, and in some cases as they see the old boxes cut open, is amusing.

Beekeepers who have handled and requeened only Italians know nothing of the difficulty of finding these little black queens. When disturbed, they race through the hives with the workers like race horses. The quiet clustering disposition of the Italians is not found in these



C. L. Sams (left), extension specialist in beekeeping for North Carolina, is not disturbed when confronted with a job in transferring like this. Black bees and box hives are the raw material with which he works.

black bees. In transferring and requeening this type of bees it is doubtful if Mr. Sams has an equal. Most likely he has requeened and transferred more bees than any other man in America.

The immense territory and number of colonies included in his work demand methods of speed and precision, both of which he has developed to the extent of mastery which few if any beekeepers have acquired. All over the state these primitive apiaries are being replaced with modern equipment and methods. If any one thinks it doesn't take work, let him follow Mr. Sams over a county a day or so. L. E. Webb.

Morganton, N. C.

FORMALIN TREATMENT SIMPLIFIED

Experiments with Shorter Immersion, then Storing Combs in Tight Piles of Supers

My experience with Hutzelman's solution may be of interest. I made a deep can as directed in Gleanings, but the number of cans required and the amount of solution did not look good to me, so I cut the top out of a can, split the remainder in half lengthways and soldered the open ends together to make a trough 20 inches long. I put can handles on the ends for convenience in handling and soldered five pop bottle stoppers to bottom, one at each corner and one in center, to preserve the bottom.

I filled the trough half full with the solution. I then immersed each comb, turned it and immersed again. Then I shook out the solution, giving a motion towards the top-bar as the cells slant slightly upward. As the combs were emptied, they were returned to the hive bodies, which had been scraped and washed in the solution. I tiered up eight hive bodies of combs, with a lid on top. After 10 days I could still smell formaldehyde, which proved that it was still working. If the spores are killed in 48 hours, several days ought to make a sure thing out of it. The alcohol and gas keep on penetrating for several days after the immersion. This work must be done in the open, as the fumes are too pungent for indoors. The treated combs when returned, did not develop American foul brood, although they contained pollen and disease cells, sealed and unsealed, but no honey.

It took over two weeks for new skin to grow on my hands, which had turned a dirty brown. Only a little tenderness developed. I bought a pair of $2.00 rubber gloves and used them on two different occasions without apparent injury to the rubber.

There was no saving by this method in the amount of solution ultimately used, but there is less paraphernalia and no bother with the extractor. Hive bodies containing dry extracting combs sandwiched in between hive bodies of wet combs ought to be disinfected as they would be bathed in a flood of alcohol, water and formaldehyde vapor, which is a powerful disinfectant. The gas is more powerful in the presence of moisture.

Lima, Pa. C. B. Shortlidge.

L. E. Webb, Morgantown, N. C., uses this photo postcard to tempt people to buy honey. Mr. Webb is a photographer as well as a beekeeper and can therefore design his own postcards.

SIFTINGS

by J. E. Crane

I was rather surprised at the low insulating value of leaves in the table given on page 659. Was not this result in part, at least, owing to the leaves being packed loosely? I notice the weight given per cubic foot is much less than that of other materials used.

* * *

Now comes Joseph M. Barr, page 654, giving us his experience with Celotex, which seems to compare favorably with other insulating materials. Celotex seems to have some decided advantages in the fact that it is free from any litter and more quickly handled.

* * *

Considerable space is taken up in October Gleanings in discussing non-crystallizing sugar syrups. The methods given for making such syrups and feeding them seem to me all well enough if you have the time and patience; but where one has a large amount of feeding to do, I fear the cold days of November would put a stop to our work and leave many hives without a full supply for winter if we tried to follow these methods.

* * *

On page 678, in A. I. Root's "Story of His Life," he says that with an assistant he extracted, in the summer of 1867, in three-fourths of a day, 285 pounds of honey. This seemed at the time a great feat. Today two men with a power extractor can extract 2000 pounds in a day, and then go home whistling; and yet some people will tell you they don't believe in evolution.

* * *

J. A. Green makes some pretty good points on pages 653 and 654. He says he does not like to mix different grades of honey, as that from a capping melter with that from the extractor. But how about the mixing of honey from new or virgin combs with the honey from old combs that have been bred in for some time? New and old combs go into the extractor together quite too often, I fear, producing an inferior article. My attention was called to this recently by sampling such honey with a very strong flavor of old combs, which was much more objectionable than the color.

* * *

Other points Mr. Green makes that are well worth remembering are, that to keep cakes of wax from cracking they should be allowed to cool slowly, and a simple method to prevent cakes from sticking to the sides of the vessel is to rub the sides with strong soap suds and let it dry before pouring in the melted wax. Thank you, Mr. Green.

* * *

A. Gordon Dye, on page 640, tells us of the "Proper Thickness of Packing." He says, "If we know the weight of the bees, we can determine the heat-producing capacity of bees under varying conditions. This knowledge is of the utmost importance if we are to make any progress in beekeeping." Now, it seems that this is a rather strong statement, as a good deal of progress has already been made without knowing the exact weight of our bees.

* * *

We have fed a great many tons of syrup year after year, made by dissolving granulated sugar in hot water, two parts sugar to one of water, and fed hot or just warm, with very little loss from granulation. But hold a little. This is not "the whole truth." We got hold of a small lot of sugar a few years ago, which, made in the same way, would granulate before the bees could take it from the feeders. So it is well to know, before we feed, the quality of sugar we use, as well as the methods of using it.

* * *

How nice it is that, when we have neither time nor strength to travel, others can do it for us and give us the important facts they learn! Thus H. H. Root tells us on page 644 of Dr. A. P. Sturtevant's efforts at sterilizing combs infected with foul brood with formalin and water. Again, on page 648, Dora Stuart gives us the experience of Mr. Vansell at the University of California along the same lines, so in half an hour we may know as much on this subject as we ourselves could by several days' work in experimenting.

* * *

Geo. S. Demuth tells us on page 673 that in feeding it is necessary to feed nearly as many pounds of dry sugar as a colony is lacking in honey. Now this doesn't look reasonable, as ten pounds of sugar and five pounds of water will make fifteen pounds of good thick syrup, and when stored should make fifteen pounds more. But this advice is all right. If you feed a colony fifteen pounds of such syrup and in two weeks weigh your colony, you will find they have gained only about the weight of the sugar fed. I have tried it. This is where many persons miss out and get left.

FROM FOREIGN LANDS By W. J. NOLAN

"Hive" is an old Norman word, states L'Apiculteur for August.

New Zealand has about 90,000 hives of bees in some 6300 apiaries, according to the New Zealand Fruit-grower and Apiarist for August.

From 220,000 to 264,000 pounds of foundation and from 40,000 to 50,000 frame hives are manufactured and sold in France annually, as estimated by the editor of La Gazette Apicole in the August issue.

Argentina, according to L'Abeille for September, produces 22,000,000 pounds of honey yearly, or about one-seventh of the conservatively estimated total for the United States. A recent investigation failed to show the presence of *Acarpis woodi* in Argentina.

Because the bee louse appears to be established in Tasmania, the Victorian Apiarists' Association recently adopted a recommendation that the importation from Tasmania of bees, or any bee material liable to be infested, be prohibited.

Beekeepers of the last few decades, who have advocated plenty of room in the hive and the adoption of swarm-preventive methods, had predecessors in men like Eyrich, of Germany, even in the middle of the eighteenth century, according to Die Bayerische Biene for September.

To safeguard against the introduction of the mite causing the Isle of Wight disease, practically the same regulations limiting the importation of adult bees are in effect in Victoria as are in force in this country. No permit is required, however, for the importation of queen-bees from the United States and Canada.

Germany has added another to its list of beekeeping experimental stations by opening a new laboratory in the Rhine Province. This latest venture was made possible through contributions from the beekeeping association in the Rhine Province, the city in which the station is located, and other governmental agencies. It is described and illustrated in Die Deutsche Bienenzucht in Theorie and Praxis for August.

The annual value of the honey crop in Japan is about $1,230,000, states Yasuo Hiratsuka in L'Abeille for September. This writer, who has published a number of articles in American bee journals, says also that about 20,000 Japanese beekeepers have European races of bees and use modern methods. On the other hand, a large number still keep the native Japanese bee, a variety of *Apis indica*.

The longevity of the world's most famous beekeepers was set forth in the Revista de Apicultura for July. Those listed, together with their ages, were: Reaumur, 74; von Hruschka, 75; Huber, 81; A. I. Root, 84; Charles Dadant, 85; Larrain Gandarillas, who first introduced Italian bees into Chile, 87; Dr. C. C. Miller, 89, and Dzierzon, 94. To these may be added: Langstroth, nearly 85; De' Rauschenfels of Italy, 87; and the late Isaac Hopkins of New Zealand, 88.

The registered imports of honey into Great Britain and Ireland, as given in the British Bee Journal for September 3, amounted during July to 1,009,100 pounds, valued at about $144,000. The wholesale price for extracted honey was given as ranging from 31 to 34 cents per pound, the retail price being a trifle over 40 cents without container. Sections were said to be worth 60 cents each, and per dozen nearly $5.85.

A diversity of opinion exists in France as to the seriousness of the bee louse, *Braula coeca*. Mr. Perret-Maisonneuve is the leader of those believing that the louse is a serious pest, while Mr. Baldensperger inclines to the opposite opinion. According to L'Apiculteur for July, this insect is now being investigated at the French apicultural research station at Montpelier and also at the entomological station at Bordeaux.

Italian bees have recently been introduced on Groote Island, off the coast of Australia and hitherto beeless, by the Victorian Apiarists' Association. The Australasian Beekeeper for July states that an ordinance has since been passed prohibiting further importation of bees into the island or the exploitation of those already established.

The honey crop in Scotland this summer was four times as large as usual, says Mr. J. Anderson in the Scottish Beekeeper for September. A colony surplus of 100 pounds is reported to be common, while one beekeeper reports obtaining over 215 pounds. The same writer states that in Glasgow alone there were over 50 tons of American section honey in July, that in June Britain imported 600 tons of honey, and that Britain's average annual importation amounts to 4000 tons. As to prices, it is stated that, whereas in Scotland early honey ranged during the

last three years from 2s to 2s 6d, and even 3s per section, prices this year have fallen rapidly.

It is commonly known that unfertilized poultry eggs will not hatch. The drone of the honeybee, on the other hand, develops from unfertilized eggs. Consequently, a factor other than fertilization is involved when eggs laid by the queen-bee do not hatch. Professor Krancher, of the University of Leipzig, gives in the Leipziger Bienenzeitung for September an interesting account of such an instance. Eggs from a certain queen developed normally during the first year of her life, but during her second year they did not hatch. Eggs from another colony were given to the colony containing this queen, and were found to hatch normally. No attempt was made to rear a virgin, however, to supersede the old queen. A microscopic examination showed that her eggs all really began to develop, but that for some reason the egg-cases had not split to release the young larvae.

The Revista de Apicultura of Argentina aims to be cosmopolitan. Besides serving the interests of beekeepers in Argentina, a department devoted to Chile was added some time ago, there being no apicultural journals printed in Chile at present. In addition, in the July issue appeared the beginning installment of "The Bee and Its Culture in Uruguay," by Señor A. M. Acosta y Lara. Uruguay is a country which has figured little in North American beekeeping literature. According to this article, an established strain of a cross between bees of the German and Italian races has given the best results under the conditions along the Rio de la Plata, and appears sufficiently constant in characteristics to be considered a new race. The importation of foreign races is not favored because of the danger of bringing in disease, foul brood at present being unknown there.

The government of Victoria made £2000 available this year to finance beekeepers until honey prices become more advantageous. Half a ton is the minimum quantity on which an advance will be made, the rate for the maximum advance being £20 per ton. The honey is to be put into government storage at Melbourne during the loan. It is to be of good, clean, marketable quality, produced in Victoria, and packed in cases of two 60-pound tins. The interest rate is 6 per cent. Three pence (about 6 cents) per case are asked for receiving and delivery at the warehouse, and 1d per case per month for storage charges. An administrative charge of 2½ per cent of the advance is also levied, plus insurance, cartage, freight, or other expenses incurred. The regulations and copy of contracts are to be found in The Victorian Bee Journal for June.

"The first queen-bee competition held in the whole world," is the description given in the Australasian Beekeeper of the test held in New South Wales under government supervision for the two years beginning December 15, 1922. It was open to all having at least 20 colonies of bees. Each competitor furnished three young untested queens to the government apiary, where each competing queen was placed under conditions as nearly alike as possible. Scoring was based on comb building, non-swarming qualities, stamina, disease-resisting qualities, honey-gathering, wintering, building-up qualities, and brood. One hundred points were the maximum for each of these eight factors, making it possible for a queen to score 800 points.

Even in central Europe where the majority of beekeepers favor the German "brown" bee, the lighter colored Italian is not without its advocates. Thus, in Czecho-Slovakia, Dr. Egon Rotter, one of the outstanding present-day specialists on bee races, has devoted a decade to breeding a golden variety. In Der Deutsche Imker for September he states he has been able to combine both color and utility in his stock. He ascribes the widespread preference in central Europe for the German bee to three reasons, viz.: (1) breeding for color seems to have been a fad, as witnessed by the passing fad there in the last century for the yellow race followed in turn by the strong trend in favor of the dark; (2) to the average beekeeper it seems much easier to keep the dark race pure because he more readily detects mismatings in Italian than in German bees; (3) national pride is a factor because the darker race is supposed to have been the original native race of German-speaking confines. Rotter, however, quotes from a German poem written about two centuries ago which refers to a "yellow" swarm of bees.

Vitamines in honey have been discussed pro and con. During the summer, Mr Alin Caillas, who has devoted much time to the analysis of honey, published data in the Bulletin de la Societe Romande to show the presence of vitamine B in honey. Lack of this vitamine in food leads to the disease beri beri. Polished rice does not contain the vitamine, and so beri beri was caused in a pigeon which Mr. Caillas fed on polished rice alone. When honey was added to the pigeon's diet, the disease disappeared within twenty-four hours, thus proving the presence of vitamine B in honey.

Washington, D. C.

FROM NORTH, EAST, WEST AND SOUTH

In Southern California— I have been on a trip to central California since my last letter. Around Bakersfield and on into the foothills along the Sierra Nevada Range, but little honey was produced. Some of the beekeepers moved to the orange groves of the Porterville and Lindsay section and got a little honey from that source.

We visited the Sequoia National Park and stood under the General Sherman tree, said to be the oldest and largest living thing in the world. It is 280 feet high, 102 feet in circumference at the base, and 17 feet in circumference one hundred feet from the ground. A collection of wild flowers, consisting of about three hundred different varieties, is an interesting attraction at the park. Many of these flowers produce nectar, but as all of the park is at a high elevation (from six to ten thousand feet) where the summer seasons are short and the nights cool, the flowers are of little value to the beekeeper. They are also found in very limited areas and not in the dense clusters as on our sage and wild buckwheat ranges of the southland.

I also visited the headquarters of what probably was once one of the greatest ventures in beekeeping ever undertaken in America—if not in the world. It is still being operated on a large scale, but under different management. It is located at Wood Lake, a most ideal spot for a central plant. Ten thousand supers and hives were made up and at one time forty men were employed, we were told. We estimated that there were 35,000 Hoffman frames in the original packages. Other supplies were in the same proportion. Trucks, trailers, extracting-houses, and other equipment are of the very best. About twelve or fifteen hundred colonies are being operated at the present time, and a fair crop of honey was secured. I was told that the original company expended something like $400,000 in the venture, and after seeing the place I can readily believe it.

Bees in general over southern California are in good condition for winter. Many of the apiaries of the back-country beekeepers are very much reduced, but the small numbers left are in most cases very heavy with honey. These should, with proper care, give good results next year.

Honey-buyers are not at all active. Some beekeepers feel that they are only waiting for the producers who are still holding to get anxious to sell and then expect to buy at their own price. There is only a limited amount of orange honey still in the hands of the producers and the market will easily absorb it before another crop is made.

In all of the country we visited we heard the same comments about conditions—too many seasons of short rainfall and that we must have a few wet years to bring things back to normal. But the fellow who keeps the bees he has in good shape and keeps his equipment ready, will be able to come back and make up for lost crops in a remarkably short time when conditions do change for the better.

The first rainfall of the season came yesterday (October 4) when from five-hundredths of an inch to two inches fell in various parts of southern California.

Corona, Calif. L. L. Andrews.

* * *

In Oregon— The honey crop in Oregon for 1925 has been rather spotted, but in most cases it has been better than usual. Both the alfalfa and sweet clover districts report a yield slightly above normal. For most sections of the western Oregon valleys, however, the crop was almost a failure, except in sections where there was plenty of Hungarian vetch. Some sections where Hungarian vetch is common produced as high as 90 pounds per colony, which is very unusual for the Willamette Valley. Those not convenient to vetch produced very little surplus, the clover having been killed out by the preceding cold winter. The retail market seems to be starting off well this fall, with the demand a little better than normal.

The display of honey in the Bee and Honey Department at the State Fair, which has just closed, was the best in the history of the fair. Although not as many individual beekeepers exhibited as usual, there were more large displays. Due to the absence of entries in certain classes, $75.00 offered in premiums was not paid out. It is possible that another year premiums can be offered for third places in the various classes, thus making it possible for a larger number of small beekeepers to enter, and by getting third place manage to pay expenses.

Mrs. C. Edith Perry, who for the past three years has been demonstrating honey at the State Fair, was again on hand this year, having been employed by the State Beekeepers' Association. It is an exceptional individual who can listen to Mrs. Perry talk honey for any length of

time and not go away determined to use more of it.

The Oregon State Beekeepers' Association is engineering, through a special committee headed by J. Skovbo, a general honey display at the Portland Live Stock Show again this fall. The live stock show management has promised a much better location for this coming fall, and beekeepers will be requested to send in 24 pounds of comb honey or extracted honey, or both, and enter them for premiums. The honey then will become the property of the state association, to pay the expenses in connection with putting on the honey display and hiring a demonstrator. It should be remembered that the live stock show is open to honey producers throughout the entire world, and it is hoped that producers from the nearby states, and possibly even from British Columbia, will also enter in the competition. The premium list may be secured by writing to the Pacific International Live Stock Exposition, Portland, Oregon, or to Mr. J. Skovbo, Hermiston, Oregon.

Corvallis, Ore. H. A. Scullen.

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In Utah— Conditions in Utah have been a little abnormal since August 10. A week of cool, cloudy, rainy weather stopped the honey flow so that little honey has been stored since that date, but enough so that the bees have been breeding heavily. Many colonies run for extracted honey will be short of winter stores unless they are fed. Frequent rains have put honey plants in fine condition for winter. One thing peculiar about the season in this part of the state, at least, is that all the honey was light amber. At this altitude (4500 feet) alfalfa honey is supposed to be always white, but not so this year. We sometimes expect a little blend from mustard, but this year it seemed to yield only pollen; and in localities where there was no mustard the color was the same. I can only make a guess as to the cause unless it was an excess of moisture, an unusual atmospheric condition here.

All alfalfa and sweet clover honey was light amber in color. This may account for our honey moving a little slower than usual. The local demand has been fair, for our honey is of good body and flavor. The flow was very good up to the date mentioned, the scale colonies showing a gain as high as 15 pounds per day. My own average was 184 pounds per colony, spring count, but August failed us and it is generally our best month for surplus.

A letter from the Department at Agriculture at Washington states that the government is sending an expert to meet with comb-honey producers to fix a standard set of grading-rules. We certainly welcome this plan, for Utah is badly in need of better grading rules for comb honey. M. A. Gill.

Hyrum, Utah.

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In Texas— The month of September has been a favorable one for bees. Rains, almost unknown for the past twelve months, have come again. The honey-producing parts of the state have received moisture sufficient to insure a honey crop next year. Horsemint, which was absent this year, is now coming up and with a fair rainfall will give a crop next season. The rain brought on a fall bloom that gave abundant pollen and nectar to induce heavy brood-rearing. The only thing to prevent safe wintering is the lack of stores. If your bees need stores, feed before November 20. Numerous cases of disease reported this month have proved to be starvation.

The honeybee is a rather particular individual when it comes to company. Several years ago it was reported from Kansas that the bees failed to get a crop of honey because of the large number of flies which were feeding on the flowers of sweet clover. It is a well-known fact that bees will not work the flower clusters of mesquite when these clusters are infested by thrips. In southwest Texas there is a beetle, sometimes called the "false lightning bug," that feeds on the pollen of horsemint. When these long black and yellow beetles are numerous the bees let horsemint alone. One of the most peculiar cases occurs in the fall of the year in the hill country of southwest Texas. Nearly every year, when rains are common in August or the first part of September, there is a heavy migration of the snout butterfly throughout southern Texas. Literally millions of these yellow-brown butterflies travel against the prevailing wind until at last they drop in death. No damage results to plants by these migrations, as the larvae of these butterflies live only on the leaves of the granjeno bushes. This plant is a close kin to the hackberry tree. The migrating butterflies drift out of the range of granjeno, so there is no suitable food plant. Another explanation, that seems to be a better one, is that all the eggs have been deposited before this migration starts. It so happens that the same rains that set off the butterflies also start a heavy blooming of rockbrush (*Eysenbardtia amorphoides*). This bush is a good honey plant and bees get much fall stores from it; but in years of the butterfly migration they seldom get any thing, as the migrating butterflie rest on these bushes and honeybees will not touch a flower. It is a wonderful sight to

see hundreds of these butterflies resting, all headed the same on the flower-clusters and branches of rockbrush.

The county fair season is again with us. The Frio County Fair, September 23-25, had a fine exhibit of bees and bee products. Frio County ranks near the top of the bee-owning counties. Gaudaloupe County Fair begins October 6, and a fine list of premiums for apiary exhibits is out.

William Zimmerman, well known in Texas bee circles, paid his San Antonio friends a visit in September. He now lives in Los Angeles, Calif., and likes "Movieland." H. B. Parks.

San Antonio, Texas.

* * *

In Montana—Since the last contribution to this department I have had a fair opportunity of securing first-hand information regarding beekeeping conditions in this state. Generally speaking, the crop in Montana has been good, only a few counties reporting a crop below normal. Among these, Gallatin County probably had the lowest average. The shortage in crop can be attributed largely to the fact that we had considerably more moisture and cooler weather than usual. The central and eastern part of the state reports a good crop, one beekeeper reporting 63,000 pounds from 200 colonies, with others reporting an average close to or above the 200-pound mark.

Honey sales to date, other than local, have been slow, although quite a number of inquiries have been received. Several cars have been moved, selling at between 8 cents and 9 cents, f. o. b. shipping point. While shipments have been somewhat slow, I believe that with the advent of colder weather sales will be considerably faster, with an advancement in prices.

Montana has had a new experience in disease-control, since this past season is the first one on record during which an inspector has been on duty the entire season. While off-hand it may seem that not a great deal has been accomplished, yet thousands of dollars have been saved for the commercial beekeepers. From all appearances, the disease in this state has been spread by a large number of abandoned apiaries. In practically every section of the state abandoned apiaries, once having 100 or more colonies, were found. Generally speaking, the diseased equipment was found stored in old log shacks having the windows broken out and the doors wide open. One outfit was uncovered in such a place with bees from the surrounding country robbing out the honey. Fire has been playing an important part in disposing of such outfits.

While we have made a start towards controlling disease here in Montana, a greater amount of co-operation and money will be required. A few of our commercial beekeepers feel that, since they personally know how to cope with American foul brood, this disease is doing them a big favor by putting the smaller beekeepers out of business and in turn increasing their own sales of honey. Unless all beekeepers push this campaign for disease-control, the time will come when they will begin to feel sorry for themselves. O. A. Sippel.

Bozeman, Mont.

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In Minnesota—Minnesota secured a bumper crop of honey after a most unpromising spring, due to a long and abundant honey flow from white, alsike, and sweet clover.

It is surprising what bees will do in a strong honey flow. Mr. Simon Kruse, on the Raddison farm at Anoka, placed 42 two-pound packages from Alabama on foundation in new hives on May 22. On June 12, when the bees had two and three frames of brood, a tornado took his whole bee-yard and scattered it through the fields for a mile. After the yard was reassembled the brood was dead, queens were missing, foundation was torn. However, the sun warmed up the scattered bees and the next day about one pint returned to each hive. New queens were given them. In October Mr. Kruse took from the forty colonies 70 cases of comb honey and 45 gallons of extracted honey.

G. C. Matthews, assistant professor in bee culture, University of Minnesota, resigned his position on September 1. Mr. Matthews, following the example of Prof. Tanquary of North Dakota, feels he can make more money in business than in university work, and has opened in Minneapolis a wholesale and retail honey business, which under his able management is bound to develop into a big concern. We need a big dealer in the Twin Cities.

The Minnesota State Fair, Sept. 5 to 12, was visited by 455,000 people. The bee and honey display attracted a steady crowd throughout the week. The sum of $1200 was offered in premiums, of which $450 went to the quality exhibit, $550 to display of honey, and $200 to the boys' and girls' honey club. (By the way, it is the aim of the Extension Division to enter in this club sons and daughters of actual beekeepers.)

The great prize contest was in the display of honey. The requirements called for 600 pounds of honey exhibited in such a way as to hook the eye of the visitor and compel him to stop and look. This called for original ideas, getting

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away from the old system of simply piling honey warehouse-fashion. The exhibit was surprising in originality and attractiveness. L. E. Hopkins, of Withrow, was awarded first prize of $100 and blue ribbon; J. F. Zimmer, Waltham, was awarded second, $75; S. Hyberg, third, $70; Robert Duell, fourth, $60; G. C. Matthews, fifth, $50; Dora Newbauer, sixth, $40; A. Schmidt, seventh, $30; F. O. Gessner, eighth, $20.

L. E. Hopkins also received sweepstakes ($50) in quality honey. He is 19 years old, the son of C. Hopkins, beekeeper, and graduated into the big class from last year's boys' and girls' honey club.

In the boys' and girls' honey club, the Redwood County Club obtained first prize in bee demonstration by Paul Mommesen, of Belview, and Esther Christianson, Belview. The Hennepin County Club received the prize for the best honey exhibits, which were made by Dell Dullum and Rose Newbauer, of Mound High School.

Wesley Foster, of Boulder, Colo., acted as judge, assisted in display judging by J. W. Hinks, display superintendent of Donaldson Department Store, Minneapolis.

It is impossible to give here activities of all county organizations. Mid-western Minnesota organization deserves special mention as boosters for co-operative marketing. Uniform honey, uniform containers, central assembling plants, and selling car-lots are on their program. They distributed 60,000 advertising blotters during the State Fair. Robert Duell, Ortonville, is their live secretary.

The Hennepin County Beekeepers' Association held three well-attended field days during the summer—the first at Dr. Leonard's, the second at S. Hyberg's home, the third at the writer's home. A well understood agreement on honey prices for the Twin Cities was the greatest result of these meetings. It is Wisconsin and Iowa which are spoiling the Twin City markets, constantly pulling down prices which we have successfully held for years. Mrs. J. F. McGuire is secretary.

The Fillmore County organization had its annual beekeepers' picnic in a grove between two beautiful trout creeks near Mr. Safterlee's bee-yard in Forestville on September 15. Over one hundred attended. Bee Inspector C. D. Blaker, Dr. L. D. Leonard, D. Prinzing, the writer, and others spoke. Foul brood was the main topic of discussion. The ladies served a perfect lunch. Mr. Saterlee is president.

The great honey crop of Minnesota worries many beekeepers as to how to dispose of their honey. A co-operative honey-marketing organization would be very handy just now, to skim off the surplus honey of the northwest and ship some carloads to places which were not blessed with a crop. Let us do something at the state meeting of the Minnesota Beekeepers' Association next November. Francis Jager.

St. Paul, Minn.

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In Wisconsin—Samples sent to the University indicate that there have been great quantities of honey-dew honey gathered this year, and there is also a considerable possibility that most of the Wisconsin honey is this year contaminated with honey-dew. Unless the beekeepers are careful to provide sufficient honey stores to carry the bees over the winter, they are likely to experience great losses due to dysentery.

It has been impossible to estimate Wisconsin's honey crop as many of the beekeepers have been too busy trying to undersell one another to send in reports. The few reports that do come in indicate that the crop was rather above normal in many sections. Bottlers and buyers at the present time seem to be pretty well stocked up.

Reports from individual beekeepers indicate that the bee tour held in August was very much appreciated by the beekeepers who were able to take in the tour, and a similar one will undoubtedly be held in 1927.

The University Beekeeping Department and the State Beekeepers' Association are planning a large field meet and chautauqua in honor of the Dadant family during the week of the 11th to 14th of August, 1926, probably at Platteville, Wisconsin. The beekeeping departments of the states of Minnesota, Iowa, and Illinois have been asked to co-operate in this memorial; and since the meeting place is near the intersection of the three states it is expected that this will be a rather important interstate meeting, especially as the beekeepers will have an opportunity to meet with Mr. N. E. France and visit his bee-yard.

The Wisconsin State Beekeepers' Association is expecting to co-operate with the American Honey Producers' League in a National Honey Week to be held during the week before Thanksgiving.

The Wisconsin State Beekeepers' Association will hold its meeting at Milwaukee on the 2d, 3d, and 4th of December, unless it should be found necessary to change to conform to the meetings of the American Honey Producers' League.

Mr. G. E. Marvin, a graduate of the

University of Wisconsin, has taken Mr. Milum's place in the beekeeping department of the university and will continue investigations on the conditions of the bee colonies during the winter period. Particular emphasis will be laid on a study of comparative values of materials used in winter packing cases. The University Beekeeping Department is also making a study of the causes of fermentation of honey and now has under observation a series of samples collected in 1922. H. F. Wilson.

Madison, Wis.

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In Michigan—We have had a wonderfully fine early fall, and all after-harvest work with the bees should be well attended to. However, it often happens that because of this prolonged spell of very fine weather many beekeepers will neglect seasonable work and find themselves very much handicapped in finishing up when cold weather comes. I have noticed several large apiaries lately with supers still piled up on the hives. This is a great mistake, as honey left beyond the cluster will absorb moisture and actually burst the cappings while on the hives. When extracted, this honey is inferior and often causes complaints because of fermentation.

As a result of the sweet clover's becoming plentiful and furnishing a part of the crop, many neglected to take off their raspberry-milkweed honey the first of August, as has been the custom in the past. As a result, there is a mixture of buckwheat in the honey. I find it better to remove the white honey the first of August and then re-super for the sweet clover and buckwheat. This gives a light amber mixture that is a very good-flavored honey and sells readily at a little less than the white honey.

Honey this season is of very good quality, due to dry warm weather during bloom, and should be good for wintering the colonies. Too often August is wet and the honey not good for wintering, resulting in spring dwindling. September was very warm and robbing very easily started.

Early in September I moved twenty-nine colonies from an out-apiary to the home apiary, and although they were in good condition and the entrances were contracted, nine of them were robbed out within a few days. Forty colonies at one corner of another apiary, which were very strong and heavily clustered on the outside of the hives, were given an empty super each of newly extracted combs to relieve the congested condition in the hive, with the result that eleven were robbed out. The weather was ideal, with a little honey coming in, and there were no indications on the part of the bees that they would rob; and yet this robbing took place so quietly that it could not easily be detected. But when I fed the yard for winter I noticed that the colonies of the entire corner where the supers had been put on had been relieved of the most of their honey. During such a spell of weather it is much better for bees and beekeeper to leave the colonies entirely alone.

Honey sales are very good, with little cutting in price. There has been considerable talk about big crops and probable price-cutting here in Michigan. If we talk price-cutting, some one will start it and then there would be a general falling-in-line. Prices once down are hard to put up again. Honey prices are fair now, but a reduction would ruin the business.

The inspection department, under B. F. Kindig, is asking for individual county support in the area-clean-up work. This seems very reasonable and certainly is desirable. All who can do so should influence their supervisors to support the movement. Package bees will be more in demand following the clean-up work, as many are short of bees due to fear of disease.

On the whole, everything seems favorable in northern Michigan for a prosperous future. I. D. Bartlett.

East Jordan, Mich.

* * *

In Northern Indiana—The honey crop in northwestern Indiana will be about average. The fall flow from goldenrod in lowland regions was good while it lasted, but on higher lands the bees secured very little from this source, and many colonies must be fed if they are to survive. Goldenrod usually yields nectar until the first killing frost, but this year, following heavy rains from the 10th to the 15th of September, there was apparently nothing more for the bees to gather. Bees generally are in excellent condition, except as to stores as noted above.

At a general meeting of the Northwestern Indiana Honey Producers at Van Wyngarten Brothers' Honey Farm, near Hebron, most of the larger producers of several counties were present and signed up as members. Not only the membership, but, so far as I am able to learn, beekeepers generally are holding to association prices. There are, however, one or two notable exceptions. It seems strange that a beekeeper of intelligence, after being shown the advantages of cooperation and informed as to prices, would sacrifice his own profits when there is no necessity for it, even if he has no regard for the industry as a whole.

These, however, are exceptional cases. Most producers in this part of the state are getting better prices and selling more honey. It is believed that if a similar plan of organization were adopted throughout the clover belt, prices would be stabilized and a greater demand brought about.

American foul brood is being reduced until now only a small percentage of colonies are affected. Commercial beemen are learning to watch more carefully for the first appearance of the disease and to give prompt treatment, and the diseased colonies of small beekeepers are being cleaned up. European foul brood is now considered mostly a thing of the past. Occasionally a colony is found affected with the disease, but it is easily disposed of by dequeening and uniting with another colony or by requeening. Most bees now seem to be immune to the disease.

A number of beekeepers are using the Hutzelman solution for disinfecting combs containing American foul brood, and it is proving a success. The only recurrence of the disease in treated combs is believed to be due to the overlooking of capped cells of honey or reinfection from some outside source. E. S. Miller.

Valparaiso, Ind.

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In Porto Rico—The present honey season for Porto Rico has been the most unusual I have seen in the past twelve years. As a rule, certain sections produce their crop within a given period of the year—it may be in the early spring, summer, or fall. If a crop is not secured at this time, nothing much can be hoped for later on. To date the yields have been very spotted, probably owing to the rather unusual rainfall we have had this year. In many apiaries which should have had the main flow before March, no honey was extracted until July. Other sections secured a small crop in the regular period, and expectations ended for the year; but I am receiving reports from several sections of the Island stating that a good honey flow is in sight from buds now on the trees, provided rain does not blast our hopes again.

The past two months have been exceptionally dry. The so-called rainy season should start here about the middle of August, but it is now mid-September. However, the dry spell now shows signs of being broken. We have had showers at night for several nights and several of the hill sections have had five or six inches of rain during the past week. If this keeps up our hopes will again go glimmering, as rain like this puts a stop to all bee work and honey-gathering.

Mr. O. W. Barrett, Agricultural Adviser for Porto Rico, is now in southern Europe, where he expects to keep his eyes open for anything that will possibly aid beekeepers here, which he will bring along when he returns.

There has been a sharp fall in the price offered for honey on the Island. A month ago honey was bringing 85 cents a gallon, but the price offered now is only 65 cents per gallon for honey of same grade. As the government quotations of honey have not declined, I am wondering if these reports can be taken at their face value. The reduction in prices was quoted by four firms located at different seaports. Three of these quoted 65 cents and one 67 cents a gallon. Penn G. Snyder.

Aibonito, Porto Rico.

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In New York—Frosts have put an end to all bloom except aster (October 8), and the last of the brood is emerging. The fall flow has been very short, and in almost all parts of New York bees will have to be fed heavily to carry them through the winter. Clover seems to be in good growth in northern New York and in the Hudson River Valley; but Secretary Wahl, of the Western New York Association, tells me that clover is scarcer than he has ever seen it in his part of the state. An old bee-man has assured us, however, that even though the fields may be bare of clover in the fall, copious rains in the spring will bring it out in abundant growth and provide a honey flow just the same.

When fall comes around the greatest problem in the production of honey hereabouts again becomes manifest; namely, the wintering problem. And the most important factor involved is stores. Bees are so short of stores this fall that many colonies will starve before spring, and many of those that live until maples bloom will starve from neglect before the clover flow. This year the winter losses will be materially increased because of a heavy late honeydew flow that came in the lower Hudson River Valley from Poughkeepsie south.

It is a pleasure to talk about the Cornell Beekeeping Library when visiting with beekeepers. They are all interested and many are eager to make a contribution of bee journals, books, or money, or to dedicate a colony of bees to the cause. Well over eight hundred contributions have already been received, and the beginning has scarcely been made.

Beekeepers here are not whooping it up over the announcement of Dr. Bruce Lineburg concerning a strain of bees immune to American foul brood. Should it be conclusively proven to be immune they will throw up their hats for joy and give the doctor three rousing cheers. We

are already beginning to wonder how such a strain would be distributed, and yet we are rudely skeptical of this early report.

Steadily forward goes the Empire State Honey Marketing Co-operative Association, Inc. A new carload buyer has been found who bought Blossomsweet honey at a premium of ⅝ of a cent. This sale was made because the buyer saw the advantage of being able to get, year in and year out, large quantities of practically the same quality of honey with little variation in flavor.

Ithaca, N. Y. R. B. Willson.

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In Ontario—At least two commercial beekeepers located in southwestern Ontario have written me lately saying that my remarks about short crops of honey in that region were not correct in so far as they are concerned, as they were harvesting one of the heaviest crops they had ever produced. My estimate was based on reliable data at the time those notes regarding the crop were written, but later on abundant rains brought on a crop from sweet clover and second crop alfalfa in many localities. While I always try to avoid giving erroneous reports, in this case I am pleased to learn that the crop in southwestern Ontario is much better than early prospects indicated. While minimizing the crop purposely is unwise, it is not, however, quite as bad as to exaggerate the size of the crop, so my correspondents will please bear with me this time. I shall try to be sure about the crop before venturing to make another estimate.

At this date we are busy feeding the bees, and, as predicted in an earlier issue of this journal, we will have a heavy feeding bill this year. The honey flow stopped abruptly about August 18 in our locality, leaving the brood-chambers practically full of brood in all stages. Many colonies used up all available honey in the brood-chambers and even drew some from supers to bring this brood to maturity. We found quite a few colonies in ten-frame Langstroth hives almost out of honey by October 1. It is needless to say that these colonies were among our very heaviest producers this past season.

Some will no doubt suggest that, had we used the so-called "food-chambers" these colonies would not have been reduced to such short rations. Granted that this is true, no harm was done by the colonies' getting short of stores at this season of the year, as they were altogether too populous anyway, and if the better. I find those using the food-chambers are feeding quite heavily, as the brood-chamber is apt to be empty at brood-rearing was curtailed, so much the close of the honey season in colonies run for extracted honey and heavily supered. While many are enthusiastic in regard to these shallow extracting supers carried over regular brood-chambers all the time, I for one positively do not want them at any price as I think their advantages are far more than discounted by their disadvantages, which are many as I see them. Especially are they not to be thought of in a locality where foul brood has a footing, as the extra set of combs to be constantly examined is no small job in itself.

The weather has been unusually cold since October 1 in our locality and work with the bees is slow on that acount, as colonies take food slowly when the weather is freezing at nights. However, there is no attempt at robbing when one goes to the apiary to feed, and one can work at will at any time of the day.

A well-known authority on beekeeping in Ontario has given through the press some good advice on feeding bees in the fall when too light to winter on the stores that may be in the brood-chamber. Among other things, he advises as much as 50 pounds of stores to each colony. I am and have been for years an advocate of heavy feeding for winter, but I just wonder if that much is required. I am sure that beekeepers using a single brood-chamber of less capacity than a ten-frame Langstroth are not allowing that amount of stores for the simple reason that there is not room for that much honey or syrup, when one makes allowance for old combs, pollen, etc. In those colonies mentioned that were about out of stores by October 1 we found that about five pails of syrup was all they would take. These pails hold about nine pounds of syrup, making about 45 pounds in all, or 30 pounds of sugar. While one would expect ten combs to hold more than that, evidently pollen takes up a lot of space. Quite likely more syrup would be taken after a week or ten days, but every cell seemed to be full and no more food would be taken after five pails had been fed. I am inclined to think that if every colony has 35 pounds of good stores by October 10 there would be little starvation.

These notes surely are dealing with the feeding question at too great length. My only excuse for thus writing is that my mind is occupied with the subject very much just at present, and we are pretty sure to talk or write about what is uppermost in our minds. J. L. Byer.

Markham, Ont.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Cheap Method of Packing To pack bees for winter I prepare empty grain sacks by ripping them where they are sewed up, then spread out old newspapers on one-half of each sack. I use seven or eight layers of paper, then bring the other half of the sack back over them and fasten at the edge in three or four places. I then stitch the ends and sides in long stitches from corner to corner, and sew enough of these together to go around the hive. I put one sack under the hive, one on top, and one or two extra ones on the north end. After this is done I fold the tops of the sacks down smooth, and put a sheet of roofing-paper over all, and tie with cord at the top and bottom.

Windsor, Vt. W. A. Spaulding.

Honey with Ham Following is a recipe which we like very much, and which has proved very popular with our friends. We call it "Ham en caserole." Put 2 thick slices of ham in bottom of casserole, or any baking dish. On top of the ham pile 4 large potatoes, peeled and halved; 6 large carrots, peeled and halved; 4 white onions, peeled and halved, and 6 turnips, peeled and halved. Over all pour ½ cup honey, 1 cup milk, and dust with paprika. Cover and bake slowly 2 to 3 hours. Do not salt. The honey and milk will be absorbed by the ham and vegetables, and you have a dish fit for a king. I have also discovered that a dessertspoonful of honey in fudge will insure its not sugaring, and same in boiled icing makes it creamy and rich.

Mrs. H. Armstrong.

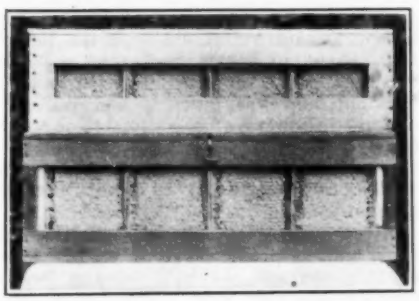
San Francisco, Calif.

Comb Honey Market Demoralized Reading the report of prices for honey makes one feel depressed with conditions existing here in Omaha. I sold my 1924 crop of comb honey at $4.80 a case, and the consequence was I had one-third of it left on hand when the new honey came. When honey was being sold at other places at 25 to 40 cents per section, it was sold here at 12½ cents per section. This season is even worse. Producers offer their honey to grocers at $2.50 a case. I was so disgusted that, even though I did not have much honey this year, I went to a commission house and sold it for $3.00 a case. I like to produce comb honey, but such conditions naturally put a damper to the greatest enthusiast and from now on there shall be no more comb honey for me. I will produce extracted honey and take what I can get for it.

Omaha, Neb. Fred Siman.

Record-Breaking Yield I feel that I am entitled to "the belt," and shall feel so until some one reports a larger yield of comb honey produced from one colony of bees between April 1 and September 15. This is what I understand is the product of one colony spring count and is as follows: On April first I selected a colony of bees, commenced stimulation with liquid feed for about fifteen days, then gave them twenty drawn combs but gave them no brood or queens or queen-cells from any other colony. They were divided into three colonies and worked through the season in three hives. I now have three colonies in fine shape for the winter, all from the one started with. During the 168 days in which I gave them special attention they produced 528 one-pound sections, or enough to fill 22 ordinary shipping cases of 24 sections each, and also 88 sections more that could not be classed as marketable honey, but were fit for home use or feeders, making in all 616 sections that were drawn out and filled with honey. For the benefit of our young beekeepers I have issued a little circular giving in detail just how I proceeded and what materials were used, what care was taken, the weather conditions, the rainfall, and everything that seemed to enter into the matter. I shall be pleased to mail a copy of this circular to any one for the asking, because I feel that we are in one of the best locations in the country. R. A. Morgan.

Vermillion, S. D.



Two of the 22 cases of comb honey stored by one colony, spring count.

Conditions for Successful Wintering The accompanying illustration shows my apiary after an unsual spring snow storm. It shows one good plan of wintering that I have used for nearly 40 years. When I have put up a colony with a good queen, a fair-sized cluster with a good proportion of young bees, together with enough good stores, they have always lived through the winter for me. I winter on the summer stands and pack six inches of leaves on all sides and 10 or 12 inches on top. I do not put any under the hive, but take care to pack the lower part of the leaves so no drafts get under the bottom-boards.

Payson, Ill. Daniel E. Robbins.

Apiary of Daniel E. Robbins as it appears in winter. There has been no winter loss of properly prepared colonies in this apiary during 40 years.

Ruinous Prices in Northwest It looks to me as though honey production is being overdone, at least here in the Northwest. With sweet clover being planted so much now by the farmers, production can almost be doubled from the same number of colonies, in comparison with five years ago. There are now so many back-lotters and farmers dabbling in bees, with a few colonies, they spoil the home market for the commercial beekeeper who is trying to make a living out of his bees. They have no idea of the value of honey and figure that it does not cost them anything. They therefore peddle it at almost any price they can get. I used to be able to dispose of the bulk of my honey in the home market at a fair price, but this fall market conditions are bad and getting worse. I am not the largest beekeeper in the country, but have kept bees since 1907. When I was in the grocery business I kept them mostly to play with, and to get a little honey for my own table; but during the last five years, since I quit the mercantile business, I have been increasing my colonies so that now I have 100 in fine condition for winter. But if it is going to be so we can't dispose of our honey at a little profit above expenses, this is too many.

Fertile, Minn. C. H. Carlson.

Radio Lectures on Bees and Honey With about 600 broadcasting stations in the United States and Canada, and with the average good radio set having a range of 1500 miles or more, it is more good luck than anything else that a lecture on the subject of bees is picked up by those who are interested in them. It is out of the question to expect any extensive advertising for a good lecture on bees, but the time is coming when these lectures will be scheduled in ample time ahead so that it can be published in the various farm and bee journals so that those of us who wish to listen to them will have the station that does the broadcasting, the date, and the hour, if possible, in our little notebook, and when the time arrives we tune in. I would like to see the publishers of Gleanings in Bee Culture devote one page of their valuable magazine to announcements of various lectures and other information of interest to the beekeeper that are to be broadcasted. It may take some time to get it going well, but it will be well worth the effort. So far I have not heard a single talk on bees, although I know many such have been given as I often see press notices of them afterwards. But press notices of things that have passed don't help me any. M. S. Joiner.

Alma, Mich.

Liquefying Granulated Honey. I find a good way to heat honey in a five or ten pound pail, for the consumer, is to hang it by a stick or other support in the reservoir of the kitchen range or some other receptacle. A cold-pack boiler is excellent for this purpose.

I believe that beekeepers should print instructions for reliquefying granulated honey and paste them on the cover of each pail. This would enlighten the consumer and enable him to care for the honey properly. Besides it is a nice place to speak your piece. A beekeeper's obligations do not cease at the station, for the digusted consumer usually goes walking. Geo. H. Foote.

Grand Rapids, Ohio.

Wire Screen for Uniting Bees I note that many advise putting paper between the brood-chambers when uniting colonies. I have done this, but it litters the hives up with the paper, as I find it partly pulled out of the hive and part of it sticks fast to the edges of the hives. I have been using a fine wire-cloth window screen between the hives with an inch hole in the center. I cover the hole with a cloth for two days, then take the cloth away, letting the bees work up or down for two days, after which I take the screen off. I have had no trouble this way. H. S. Sims.

Midland, Mich.

Bee Philosophy Make your leisure hours count. The honeybee makes wax while it rests.

You can't expect to find honey if you do not go where the honey is.

The busiest bee does not do the most buzzing.

One can not live altogether on the sweets of life. Even bees require bread and water as well as honey.

Sickness in a good many cases is the result of ignorance. Sickness is not tolerated in the bee-hive.

The queen was a grub before she was a queen. Do not despise humble bee-ginnings.

A good artist can make a good picture with a poor brush, but he can make a better picture with a good brush. Keep the right tools handy.

The waster robs himself and his neighbor.

Little drops of honey,
Little grains of wax,
Help the thrifty keeper,
Pay his income tax.

Hamilton, Ont. Harriet Ellington.

Inducing Consumers to Use Honey In the first place the consumer should not have to pay an exorbitant price for honey, as this would prohibit a certain class from using it. When it can be obtained at a fair price, a large amount will be used. Some must see the honey before they buy. It is just so with the market gardener's sales. If a sign is put up announcing certain vegetables for sale there will be few buyers; but just display the real goods in a neat manner and notice the immediate boom in business. To be sure, the big producers have large quantities to sell which should be shipped and distributed where most needed. Plenty of work and good salaries and wages to all classes mean more to buy with and more sales. A. C. Gilbert.

East Avon, N. Y.

More About Snowberry. In the A B C and X Y Z of Bee Culture, under the title of "Buckbush," we read that "wolfberry in Idaho is one of the most important honey plants." Now from Fernie, B. C., comes the report of an average of 238 pounds per colony, chiefly from snowberry, which is a related species.

In 1910 a great fire swept over the St. Joe country. Hundreds of thousands of acres were devastated of millions of feet of valuable timber, and many lives were lost. In two or three years fireweed sprang up in this burnt-over country, and every one went wild over bees, wonderful yields being reported. About the third year the fireweed died out and a bramble of willow and buckbush took its place.

I have an apiary nestled at the foot of a mountain now covered with willow and buckbush. Several hundred acres are within range of the bees. This sounds good, doesn't it? But never have I heard a beekeeper in this region refer to buckbush as a source of surplus. My apiary has nestled at the foot of this mountain for seven years; and as I keep a record, not only of my bees but also of the blooming period of the flowers and to what extent the bees work them, I find by looking back that my bees once in these seven years (1920) made a small surplus of buckbush honey. The honey was almost water-white and considerably lighter in body than clover honey. We kept some of it 18 months and it was still liquid. Last year's record reads: Snowberry, May 19; failing, July 13; bees working quite freely, July 17; out, July 25. The year before, the bees at no time worked buckbush.

St. Maries, Idaho. J. N. Clark.

Winter packing methods used by Otto A. Winter, Romeo, Mich. (1) The hive is lifted from its stand by means of a tackle and tripod. (2) The bottom of the winter case is slipped in place and the hive let down onto it. (3) The hives are lined up against the entrance tunnel before the back end of the winter case is put in place. (4) After the packing material is poured in and the cover put on, the bees are ready for the long winter.

GLEANED BY ASKING

Geo. S. Demuth

Shape of Honeycomb Cell

Question.—Do bees make their honeycomb with six-sided cells regularly, or are the cells circular when first made? James F. Harris.
Massachusetts.

Answer.—The cells are six-sided when first made. Of course, when foundation is given to the bees the pattern is already made for the six-sided cells, but when the bees build comb without foundation the septum is laid out in advance for hexagonal cells, as may be seen by examining the lower edge of newly-built comb when comb-building is in progress. Some have argued that the cells are circular when first built and become hexagonal on account of being crowded together, but careful study of the building of the septum reveals that the cells are laid out in hexagonal form from the start. The coping on the surface of the comb at the outer end of the cells is slightly heavier at the angles, thus making the opening more nearly circular in form. This is sometimes mentioned as evidence that the cell was originally circular instead of six-sided, but the coping is apparently for the purpose of strengthening the comb instead of indicating the original shape of the cell. Even with the heavier coping at the angle the opening of the cell is still hexagonal in its general appearance, especially worker cells, which are not strengthened with as heavy coping as drone cells.

Disposition of Diseased Colonies Late in Season

Question.—What should be done with colonies discovered to have American foul brood too late in the season to give the shaking treatment? H. D. Williams.
Indiana.

Answer.—If the disease is well advanced so that a large proportion of the brood fails to mature, it is as a rule not worth while to try to save the bees, since the colony is already weakened and probably has a large proportion of old bees. On the other hand, if there are only a few cells of diseased brood at this time the bees may be shaken from their combs into an empty clean hive, then given combs of sealed honey. Since brood-rearing will not be resumed for several months, any diseased honey the bees take with them will be consumed before it can be fed to the larvae. In order to make sure that the infected honey is used up, some advise confining the bees in an empty hive or cage for 24 to 36 hours until they have consumed the honey from their honey-sacs. The diseased combs should, of course, either be destroyed immediately after the bees are shaken from them or treated in the Hutzelman solution to sterilize them. In case only one or two colonies are diseased, the usual practice is to burn the combs at once and scorch the hive lightly on the inside in order to sterilize it.

Slater's Felt for Packing Bees

Question.—Where can I obtain slater's felt, which is recommended for packing bees for winter? Truman Capps.
Illinois.

Answer.—Slater's felt is simply a light grade of tarred paper, sometimes called single-ply roofing paper. It can be obtained from dealers in builders' supplies and is sold at some hardware stores.

Heating Honey in 60-lb. Cans

Question.—Should the screw cap be taken off the 60-lb. cans when heating honey to liquify it? V. Green.
Texas.

Answer.—No. If the screw caps were taken off there would be danger of the honey running out at the top on expanding. When the caps are left on the expansion is taken care of by the bulging of the sides of the can. In heating honey for bottling the 60-lb. cans can be placed in a tank of water and heated to about 150 degrees Fahrenheit. Most honey will stand 160 degrees Fahrenheit for a short time, but great care must be taken when this temperature is used to prevent scorching. Honey thus heated and bottled while hot will remain liquid for some time.

Wintering in Small Outdoor Building

Question.—Last winter I put three colonies in a small building, but on warms days some of the bees came out and did not get back to their hives. How can I overcome this trouble?
Ohio. C. A. Hertger.

Answer.—Bees should not be carried into an outdoor building for winter in your climate. They will winter better if left standing out where they will have the benefit of the sunshine and where they will not be lost on warm days when they take a winter flight. Bees do not easily lose the memory of their location even after several weeks' confinement to their hives during cold weather, and if the hives are moved many of them will be lost in the manner you describe. It is far better to pack the bees on their summer stands or put them into a good cellar. In the latter case they are deprived of winter flights, since the cellar is kept dark.

Consumption of Pollen During Winter

Question.—In the absence of pollen in sufficient quantity to winter the bees, what is the best and safest feed to use instead?
Indiana. John W. Courtney.

Answer.—Apparently bees consume but little if any pollen during the winter when in a normal condition. Pollen is used most extensively in brood-rearing

and apparently is not needed by the adult bees during the quiescent period of winter. Colonies entirely deprived of pollen in the fall, but supplied with plenty of good honey or sugar syrup, apparently winter as well as colonies having plenty of pollen. However, if no pollen is available in the spring, brood-rearing will be held back until pollen is available.

Fermentation in Honey

Question.—What is the cause of fermentation in honey and what can I do to remedy this trouble? Henry Maraman.
Kentucky.

Answer.—Fermentation can take place only when the honey is not heavy enough to prevent this. Honey that is not properly ripened or honey that is exposed to a damp atmosphere, either in the combs or in the tanks after being removed from the hives is liable to ferment. Honey that is only slightly fermented can be greatly improved by heating it to about 150 degrees, although slight fermentation usually injures the flavor to some extent. There is a great difference in the tendency to fermentation even in honey of the same density. That which is gathered slowly is often inclined to ferment, while that gathered rapidly and of the same density is not. Honey from the second crop of red clover often gives trouble by fermenting. This frequently happens in comb honey, even though it is apparently well ripened and sealed. Fermentation causes an expansion of the honey in the cells, when it bursts out through the cappings, giving to comb honey a very messy appearance.

Young Bees Unable to Emerge From Their Cells

Question.—Why do some of the young bees die in the act of emerging? They are able to uncap their cells but seem to be unable to get out. S. O. Watson.
Idaho.

Answer.—It frequently happens, especially in single-walled hives, that the bees cluster away from a patch of sealed brood during cold nights in autumn, resulting in the young bees becoming chilled. In some cases these young bees are nearly ready to emerge, but the chilling makes them too weak to do so. They can often be seen thrown out of the hive at the entrance, still alive but unable to crawl about.

Elongation of Brood-Cells

Question.—What causes the bees to draw out worker-cells here and there on the brood-combs beyond the rest of the worker cells? The colony that is doing this has a queen but it rears only enough brood to keep the colony from dying out. Benj. W. Savage.
Mississippi.

Answer.—Bees draw out cells to greater length to accommodate drone brood. Evidently the queen in this colony is not a good one and many of her eggs laid in worker cells produce drones. It will be well to kill this queen and introduce a good one if the bees do not rear one to supersede her.

Granulation of Winter Stores

Question.—I expect to winter most of my colonies in two-story hives with the upper story full or partly full of honey. Will the honey in the upper story granulate if left on all winter, or will there be sufficient heat to keep it from granulating?
Ohio. Lewis D. Taylor.

Answer.—This will depend upon the character of the honey to a large extent. The honey stored in some localities is more inclined to granulate than in others, but in the eastern states there is, as a rule, not much trouble from the granulation of winter stores. Theoretically, there would be a greater variation in the temperature on the inside of the hive when two stories are used for winter than when a single story is used, unless a greater amount of packing is used to make up for the greater loss of heat through the walls. In actual practice it is doubtful if any difference will be noticed in the amount of granulation whether bees are wintered in a single story or in two stories, provided the hives are well protected.

Queen-Excluder Under Food-Chamber

Question.—Should the excluder be left between the brood-chamber and the food-chamber during winter? If it is taken out how can the queen be put down into the brood-chamber in the spring? Leo H. Brumm.
Minnesota.

Answer.—The queen-excluder should be taken away in late summer or fall so that the food-chamber is placed directly upon the brood-chamber. It does no harm if the queen does lay in the food-chamber in the spring, and it is not necessary to put her down until after the first great expansion in brood-rearing in the spring. The queen can be put down when the time comes for this by smoking at the top of the food-chamber, then waiting until the queen has had time to go below. However, it sometimes happens that the food-chamber is refilled with honey from early sources so that the queen is crowded down, in which case it is often advisable to give another story of dark combs between the food-chamber and the brood-chamber, giving the queen the run of the entire hive in the month of May in your locality. Weak colonies sometimes start brood-rearing in the food-chamber in the spring and fail to extend brood into the brood-chamber until badly crowded; but this does not occur in colonies of normal strength.

Packing Bees at Little Expense

Question.—Please tell me how to pack bees for winter at little expense. Paul Pufahl.
Idaho.

Answer.—You can pack the bees at but little expense for material by using single-ply tarred paper to hold the packing in place as described in "Talks to Beginners" in the October issue.

JUST NEWS
Editors

A meeting of the Empire State Federation of Beekeepers' Co-operative Associations, Inc., will be held in Syracuse, New York, during the second week in December. The affiliated local associations are expected to hold a meeting previous to the meeting of the Federation.

* * *

The U. S. Department of Agriculture announces a new bulletin of interest to beekeepers on the effect on honeybees of spraying fruit trees with arsenicals. The bulletin will not be distributed to regular mailing lists, but will be sent to those who apply for it.

* * *

The first meeting of the Cornell Apis Club was held October 2, 1925. Mr. Everett Oertel was elected chairman and Virgil Argon, vice-chairman. Plans have been made to study the lives of noted beekeepers during the winter and these biographies will be published by the club later.

* * *

The Bee World, published by the Apis Club, at Oxon, England, announces that Dr. E. F. Phillips, who was recently elected president of the Apis Club, will deliver in person his presidential address at the forthcoming Annual General Conference of the members next spring. Elaborate preparations are being made to entertain Dr. Phillips at this time.

* * *

Alois Alfonsus, formerly of Austria, and a well-known authority on bee culture in Europe, who has spent several years in the United States, has written a "Hand Book on Queen-Rearing." This is published in German by the Leipziger Bienenzeitung at Leipzig, Germany. In the preface Mr. Alfonsus acknowledges special obligation to Prof. Francis Jager, of the University of Minnesota, for having given him an opportunity for learning American methods of queen-rearing thoroughly.

* * *

Official trade statistics, published in Foreign Commerce and Navigation of the United States, show that our exports of honey increased from 2,086,008 pounds, valued at $236,558 in 1923, to 5,013,760 pounds, valued at $529,102 in 1924, or about 150 per cent gain. Our imports of foreign honey decreased from 364,970 pounds in 1923, valued at $28,656, to 276,514 pounds, valued at $37,624 in 1924, a decline of about 30 per cent as to quantity, although the price paid was higher. Improved demand from the United Kingdom, Germany, Netherlands, and Belgium contributed most largely to this increase of American honey exports.

* * *

Jas. I. Hambleton, of the Bee Culture Office of the Bureau of Entomology, Washington, D. C., is sending out a list of questions to thousands of beekeepers scattered throughout the United States, regarding the honey plants and the dates of the blooming of each for the various localities in order to obtain more definite information on regional differences. This work is preparatory to the issuing of bulletins for other beekeeping regions similar to those already published by the Bureau of Entomology for the white clover region, the buckwheat region, and the tulip-tree region.

* * *

According to L. W. Kephart, of the forage crop investigation division of the United States Department of Agriculture, Pottawattamie County, Iowa, is the most extensive grower of sweet clover of any county in the United States. Not long ago a county in North Dakota was credited with this honor, but according to Mr. Kephart this now passes to the Iowa county. Council Bluffs seedsmen have sold upward of 30 carloads of sweet clover seed to farmers in their territory in a single year. Because the local farmers have had such fine results through the use of the once despised plant, the department at Washington sent Mr. Kephart to investigate their methods.

* * *

The American Honey Producers' League Schedule Committee for the western states has announced the following series of meetings: Nebraska Beekeepers' Association at North Platte, January 5, and at Lincoln, January 6; Wyoming Beekeepers' Association at Thermopolis, January 7 to 9; the Montana Beekeepers' Association at Billings, January 11 to 13; the Washington Beekeepers' Association (place not announced), January 14 to 16; Oregon Beekeepers' Association (place not announced), January 18 to 20; California State Beekeepers' Association (place not announced), January 21 to 23; Utah Beekeepers' Association at Salt Lake City, February 1 to 3; South Dakota Beekeepers' Association at Yankton, February 5 and 6; North North Dakota Beekeepers' Association at Fargo, February 8 to 10.

BEES, MEN AND THINGS
(You may find it here)

"The 1925 crop of honey is moving well now. Bees are in good condition for winter and we are having plenty of rain this fall."—F. E. Bierman, Lenawee County, Mich.

"An electric fan has been recommended to ventilate bee cellars. Removing the bag from a vacuum cleaner will provide a splendid fan for this purpose."—J. H. Fisbeck, St. Louis, Mo.

"When a good crop of honey is secured only once in three years, and then a decent market can not be found, it surely puts a damper on beekeeping."—Walter Godard, Jackson County, Iowa.

"We are back in Nebraska after a fairly profitable summer with the bees in South Dakota. They had the worst drouth there in 25 years, hence the yield was not what it should have been."—Mrs. Loren S. Case, Buffalo County, Neb.

"I believe that a higher temperature in the cellar will prevent moldy combs and enable the bees to better withstand upward ventilation if it is thought necessary to provide ventilation at the tops of the hives."—Walter Harmer, Manistee County, Mich.

"Last season was a very good one for honey over New South Wales, and big crops were taken; but in many cases the honey is still on hand. The season just beginning promises very well in most parts of the state."—Les. C. W. Smart, N. S. W., Aus.

"I really think that every bee-man with two hundred colonies should set aside $50.00 a year for local and national advertising. If this were done the demand for honey would be increased and the price would go up enough to pay back the money several times. The fact that a lot of us are broke most of the time is our own fault."—J. A. Mack, San Bernardino County, Calif.

"We are having a rather chaotic condition in the honey market in Wisconsin this fall because many of our beekeepers are disregarding rules and regulations as far as marketing is concerned, so that honey can be bought at almost any price. However, cheap honey is rapidly disappearing from the market and I believe within another month conditions will be more stable."—H. F. Wilson, Dane County, Wis.

"My article in August Gleanings on a combination clustering box and feeder should have said only the roughest of roofing material should be used for the lining since the bees have difficulty in climbing a smooth surface after they have had their feet in the syrup. If a smooth lining must be used, put a piece of screen wire cloth or thin board at each end, tacking only at the top."—Thomas Martin, Lambton County, Ont.

"A dispatch from Springfield, Ohio, tells of the serving of papers on A. I. Root Company, of Medina, the largest bee dealers in the world, ordering them to remove at once from the roof of 44 Vesey Street, New York, more than a million bees which are kept there by an agency of the company. Complaint was made by a candy dealer about a block from the bee agency that the bees ate his store of candy and stung his employees."—New York Tribune, Sept. 1, 1925, under "Twenty Years Ago Today."

"We shipped 200 colonies from Mississippi to Wisconsin in May. Jim spent a month preparing them and the shipment was highly successful. We lost one colony which contained too many bees. The hives were packed solid with 2 x 2 strips between and were screened at the top and bottom. There were no passageways in the car. The car was sealed at the shipping point and opened here five days later, bees therefore receiving no water and no attention."—Joseph M. Barr, Milwaukee County, Wis.

"I had some recurrence of American foul brood after having treated the diseased combs with the Hutzelman Solution, but I now attribute this to the use of my Alexander feeder. I feed in this way after shaking for American foul brood instead of depending on the honey flow. It is quite possible that diseased scales might have dropped in at some time, or they may have become contaminated through filling them at some time with the diseased honey. They have never been scorched out at any time."—J. H. Fisbeck, St. Louis, Mo.

"I tried out acid in sugar syrup very thoroughly ten or twelve years ago and condemned it as being unsatisfactory for large-scale feeding. Then I developed my system of feeding the syrup cold in the "pepper-box' feeders. The most important point in my whole system of feeding is warm packing around the pails to retain cluster heat. It is this packing and the feeder board which retains it which has made it possible and quite practicable for me to feed cold syrup in ten-pound pails in Ontario every month in the year." — Morley Pettit, Halton County, Ontario.

A. I. Root's Story of His Own Life

For, lo, the winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in the land.—Cant. 2:12.

In the year 1866 I had a light colony, or rather nucleus, that I put into the cellar. This cellar was so arranged as to keep an even temperature of about 40 degrees. We gave only one comb of sealed honey early in December, at which time the bees were almost entirely destitute. Nearly every day I tapped on the side of the hive, expecting the bees to be out of honey long before spring; but, to my surprise, they answered promptly every time until the middle of March, when I set them out of the cellar. I was agreeably surprised to find not more than twenty dead bees on the bottom-board, though other colonies had lost two or three quarts; and, on taking out the frame of honey supplied, I found what I would have supposed an impossibility—nearly all of it remained. These bees must have lived more than three months on less than three pounds of honey. By placing my ear against the hive in the cellar I could hear scarcely a sound unless the hive had been jarred in some way.

What I Learned About Wintering

By 1874 I had learned that, if a ten-frame colony in the fall had seven combs of brood and bees enough to cover them nicely, it would not be too strong the first day of September. If the brood-combs all bulged above the brood with sealed stores, and the other combs were full and heavy with pollen and sealed stores, there would be an ample supply. Uncapped, watery-looking honey I did not consider desirable. I favored sugar syrup in place of honey, fed to the bees principally during the month of August. During this month I also fed enough to keep up brood-rearing briskly, moving the combs about but little and leaving each colony all the pollen gathered and just in the position the bees placed it.

Wintering Bees on Candy

I once tried some home-made candy for wintering bees. I put it over the cluster, but it soon got soft and sticky and finally ran down on the bees and daubed them up in such a way that I never wanted to see any more candy, and I suppose the bees felt about the same.

In October, 1875, I was away from home for a couple of weeks and when I returned my feeding was rather behind. It was about the middle of October and I was so afraid that the bees would not get the syrup nicely sealed that I stopped feeding and sent a barrel of "Coffee A" sugar to the confectioners to have it made it into nice hard candy. I proposed to give several good strong colonies about half their rations in candy laid under the quilt on top of the frames.

All unoccupied combs were removed and piled up where they would be handy the next spring. I was rather disappointed to find that my strong colonies when thus condensed did not cover more than four to seven combs, yet when these were well filled with stores I thought the supply ample. If I had any doubt I laid sticks of candy on top of the frames under the quilt. The sticks were 10" by ½" by 1½". I gave one colony nothing but empty combs and candy. The candy was very hard and brittle and therefore I did not think it unwholesome. It cost about 12c a pound.

Preparing Bees for Winter

By November 1, 1875, I had reduced my bees from 108 to 90 colonies, and I believed they were all supplied with winter stores. But after weighing them I was much disappointed in finding that I dared risk very few of them, especially since they were so much stronger than usual. There was no help for it, and, since I dared not feed syrup so late, I gave them bricks of candy. There is one very great advantage in favor of the candy: it can be given at any time and under any circumstances without the least danger of robbing.

I united 18 colonies by simply lifting bees, combs, and all into the hive desired, and did not see a single queen attacked. I was agreeably surprised to find that where the hives were no farther apart than 6 feet from center to center, any one could be united with its neighbor and the hive itself removed at once when the bees were flying, for they would all find the hive to which the colony had been united by hearing their comrades call, so that not a single bee would return to the old stand and be lost.

Where the distance was greater than 6 feet I shook all the bees off the combs in a heap before the entrance, removing the old hive entirely. The bees on the wing gathered at once at the hive where

the commotion was, attracted by the loud humming of their companions, and all went in like a new swarm.

My colonies were not all in the condition I could wish, after all. Those in the house apiary had too few bees, all being new colonies made late in the season. The others had plenty of bees, but on this very account were found short of stores in October, and that is the reason I gave the candy. The bees stored this in the combs at a very fair rate during warm weather, but when it became cool the candy was taken very slowly. Since they could not finish it entirely, I put them away, candy and all.

Importance of Housing Bees Early

I feel sure that dampness in some form or other had much to do with my losses in wintering in the early years, and by the fall of 1875 I was advising that all colonies be fixed, whatever the plan might be, during warm dry weather. So far as I can recall, my losses occurred when I had housed the bees during cold wet weather. Indeed, in the fall of 1873 they were housed during a snow storm. I had waited so long that I dared not wait any longer, so in they went. Perhaps the manure heaped around the hives that I was trying at the time contributed to keep the hives damp during the entire spring also. In the fall of 1874 I put the bees in the beehouse on the 3d of November, at least two weeks earlier than ever before. They were put in as dry as a chip, for it was during very dry weather when it was so warm that I feared the consequences; yet they seemed to go into that desirable dormant state at once. As I was all taken up with the glass house, the majority of the colonies were almost entirely neglected (?) until March 15; and yet, strange to say, they seemed almost precisely as they were the day they were put away, and they made as fine progress as one could wish until the freeze during the April following.

A strong colony of bees will dry out a damp hive or a set of damp mouldy combs. In fact, one might drench the bees with water and they would soon be all right again if they were given only half a chance. The small colony, on the other hand, can do nothing and will remain damp and cold until they perish. If a colony has a cluster only on one side and on combs containing watery honey or combs that look blue and moldy, it is pretty safe to assume that the bees will not winter well, and that the sugar that was fed, the time, the bees, and the queen will all be lost. The remedy is to unite colonies until they are strong enough to be able to drive out not only the moth millers, ants, and all insect enemies, but also dampness and the wintering malady as well.

Wintering on Candy and Flour

In 1877 I made some experiments in giving bees small amounts of candy and discovered that under this treatment the combs soon filled up and everything began to prosper.. I began wondering if there were not some way of giving them a big lot at one time. Candy bricks could be put above the frames, but after these had been consumed the bees were quite apt to build combs above the frames. Putting a heavy frame of sealed honey into a hive seemed the most satisfactory way, and therefore I had a cake of candy made that would just fit inside a Langstroth frame. The bees at once filled their combs as if it were clover time, and yet it was done so quietly that not a robber even smelled any feeding going on. One such frame weighed seven pounds, and I felt that a pair of them would winter a large colony even without a drop of stores. Then it could be packed as snugly as desired under chaff cushions. After the candy was all gone the bees could build comb in the frame that contained it..

While feeding this candy many eggs were laid, but as the bees were entirely out of pollen no larvae made their appearance. So I had some more slabs of candy made the same as before, but with one part of flour to ten of sugar. This looked all right, so I made another one one-fourth flour. The bees ate this in preference to the pure sugar and soon had a nice lot of brood.

Wool Cushions for Winter

I often thought of hair, fur, feathers, etc., for cushions, and did experiment in the winter of 1876 with a colony done up in wool; but the bees got tangled in it in such a way that I desisted. A friend of mine used cushions made of wool, I believe, with good results, although they were rather more expensive than chaff or cotton. I decided that the covering for all these kinds of cushions would have to be made of duck, for any other fabric would soon be gnawed through. Many of my friends wasted money in trying different kinds of woolen cloth, but everything I tried like this was sooner or later eaten full of holes and spoiled by the bees, except the hard twisted cotton such as I have mentioned.

In 1876-77 I wintered less than a quart of bees in the house apiary and had the little colony increasing almost all winter long by help of the chaff cushions.

Frames on End in Winter

In the February number, 1883, a correspondent suggested standing the regular Langstroth frames on end in two hive bodies, so as to have room for packing

material. This was an old idea even at the time, first mentioned I believe by Mr. Quinby, but also described in Gleanings in the early days. I do not know that I ever had a report from anyone who had tried the plan, however. I suggested the use of only three combs a little farther apart than in the summer. These would easily hold all the bees needed for winter, but of course for an extremely large colony six combs would be used instead of three.

BOOK REVIEW

The Anatomy and Physiology of the Honeybee. A Review of Snodgrass' New Book on This Subject.

In 1910 Mr. R. E. Snodgrass wrote a bulletin on the anatomy of the honeybee which was published as Technical Bulletin 18 of the Bureau of Entomology. The edition of this bulletin was necessarily limited and was soon exhausted; but ever since there has been a demand for it which could not be supplied. Now the author has rewritten, enlarged, and improved this work, and it is issued in book form.* This is so important a contribution to our knowledge of the honeybee that it seems necessary to bring it to the attention of beekeepers so that they may realize that this is not merely another bee-book.

The anatomy of the honeybee has attracted much attention for many years, and in quite too many cases it has been discussed by those whose training was so inadequate that their descriptions and discussions were quite misinforming. No animal has been so maligned and abused anatomically as the bee, all because we beekeepers have all been curious about it and anxious to learn more. Various parts of the bee had been carefully and adequately described before 1910, but there was no general account of the anatomy of the adult bee in which reliance could be placed. The bulletin which Snodgrass wrote in 1910 was, therefore, a marked contribution.

In his preface to the present book the author states that friends have expressed surprise that the bee should have changed so much in fourteen years as to require such a considerable rewriting of its structure, and the same thought doubtless comes to the minds of many readers. During the past fourteen years many papers have appeared in the scientific literature which have elucidated doubtful points about the structure and function of various parts of the honeybee. The vast majority of these papers have not received mention in the beekeeping literature and have, therefore, not come to the attention of those who take the keenest interest in everything pertaining to the bee. These contributions by others, chiefly foreign workers, alone make it desirable that there be a revision of this work, but this is not the chief virtue of the present book. The author has carefully reviewed the more recent scientific work in this field, but, still finding many unworked fields, he has added material from his extensive personal investigations. There is a vast amount of data published here for the first time. It will be noted also that he omits from his literature list some of the older and unreliable works in this field.

Mr. Snodgrass is an artist of high order, as is well known to most American beekeepers who have seen the line drawings which have been used to illustrate the publications of the Bureau of Entomology, most of these being his work. There are almost twice as many figures in this book as in the author's bulletin on bee anatomy. Beekeepers may not know that he is also one of the leading authorities, if not the leading one, on insect structure today. This is a rare combination of abilities for such a work as the present one, causing the book far to outrank any other in this field.

One other point needs emphasis regarding this book. It is not dry. The author has a delightful style, making everything that he writes alive. He uses scientific terms of necessity in such a book, but he defines every one of them; and, furthermore, he never uses a large, mouth-filling word where simple Anglo-Saxon will serve the purpose. Too many writers in scientific literature seem to feel that they must not lower the standards of their cult by using words of less than four syllables, but Snodgrass has so such delusions. His purpose in writing is to transmit to his readers certain facts which he has discovered, and he does this in the easiest and simplest way possible and a charming style. A few thousand extra copies of this book might well be purchased merely as a token of appreciation for this attitude. Because of this characteristic of his work, this book is not too technical for the well-informed beekeeper. There will perhaps be places which will choke him a bit, but he can read the book, omitting the too technical part, and at the close will have a knowledge of the bee which he did not have before and will have broadened his outlook on bees and on life in a way that is worth while. I have failed to find in the book much that will increase the honey crop, so do not look for that; but this is far from being the sole purpose of our reading about bees, or even about beekeeping practices in other regions than our own.

I have praised this book in rather extravagant langauge, but on re-reading it I have no cause for criticism of what I have said. Beekeepers in colleges and experiment stations must have this book at once, and there will be many practical beekeepers who will get it and feel repaid for the effort which they must make in reading it. E. F. Phillips.

Ithaca, N. Y.

*Snodgrass, R. E., 1925. Anatomy and Physiology of the Honeybee. xvi-327 pp., 108 figs. New York: McGraw-Hill Book Company. Price, $3.50.

SOUR HONEY DEPT.

Nothin atall is wrong with me nor mine this month to date. I am settin prittier than ever I was. My coon dog looks as promisin as a dog could and the man I bought him of on a fur sharin basis says my promises couldnt be stronger and I and he are great friends. He gets a third of the fur till his sum total amounts to $25 when I get full title to his dog. Trappin and coon huntin season opens Nov. 15 and I can hardly wait for there's a lot of coon tracks and mushrat slides all along Hardscrabble creek, the scenes of my greatest activities, and sharin my highest interest only with my scientiphic work on developin my winter-hunger resistant strain of bees on which the whole beekeepin world now waits tiptoe pritty nigh breathless. I know it does for Jim Hambleton was here in Medina the other day who is the head of all beekeepin at Washinton. He brought along his assistant E. L. Secrist showin us how some big

(Continued on page 749.)

Classified Advertisements

Notices will be inserted in the classified columns for 7c per word. You must say you want your advertisement in the classified columns, or we will not be responsible for errors. For special conditions on bee and queen advertising please write us. Copy should be received by 15th of preceding month to insure insertion. Cash with copy if credit has not been established previously.

REGULAR ADVERTISERS DISCONTINUED IN GOOD STANDING

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

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HONEY AND WAX FOR SALE

FOR SALE—Clover honey in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

COMB and extracted honey—none finer. H. J. Walters, Brugoon, Ohio.

CLOVER honey in new 60-lb. cans. Sample, 15c. W. B. Crane, McComb, Ohio.

CLAFONY QUALITY HONEY in kegs, cans, pails. Clarence Foote, Delanson, New York.

SAMPLES free of white clover honey in 5-lb. pails. Henry Stewart, Prophetstown, Ill.

CHOICE clover honey in new 60-lb. cans, 12c per lb. Henry A. Meyer, West Point, Nebr.

EXTRACTED honey for sale, clover, buckwheat and amber. C. N. Ballard, Valois, N. Y.

NEW crop white clover honey in 60-lb. tin cans. Write for prices. D. R. Townsend, Northstar, Mich.

HONEY for sale, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

EXTRACTED HONEY FOR SALE—Clover, buckwheat, any kind of package. C. J. Baldridge, Kendaia, N. Y.

FOR SALE—Comb and extracted white clover honey. Prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. North Dakota Bee Supply Co., 701 Center Ave., Moorhead, Minn.

NEW crop white clover and light amber honey. Prices on request. Sample 15c. W. S. Wiggins, Muir, Mich.

BUCKWHEAT honey in 120-lb. lots, 9c lb; white honey in 5-lb. pails, 12 in case, 12c lb., cash with order, f. o. b. shipping point. Loren Yaw, Roaring Branch, Pa.

NEW crop fine quality clover honey, $13.75 per case of 120 lbs., 2 cans to case. Let us supply you early. W. D. Achord & Son, 320 Howard St., Findlay, Ohio.

FOR SALE—Our fine quality 1925 crop white and sweet clover honey, put up in 60-lb. cans, two to a case. Write for prices. Sample, 20c. Martin Carsmoe, Ruthven, Iowa.

FOR SALE—Twelve tons light amber and amber in new sixties. J. N. Harris, St. Louis, Mich.

CHOICE dark honey from buckwheat and goldenrod, 60-lb. cans, 8c per lb. Frank Rasmussen, Greenville, Mich.

FOR SALE—New crop clover honey in good second-hand 60-lb. cans, 2 in a case, $14.00 per case. Chas. W. Zweily, Willow Springs, Ill.

WILD raspberry and milkweed honey in 5 and 10 lb. pails and 60-lb. tins. Write for prices. Hubbard Bros., Boyne Falls, Mich.

WANTED—Basswood honey, half-ton shipments. Send sample and state price. J. K. Wolosevich, 913 W. Cullerton St., Chicago, Ill.

EXTRA white honey in 60-lb. cans, 12c per lb. in large lots, f. o. b. Blackwell. F. C. Gentz, Blackwell, Wisconsin.

FOR SALE—Extra fine clover honey in new 60-lb. cans, two to the case, at $14.00. Adam Bodenschatz, Lemont, Ill.

FOR SALE—Extracted, comb, and chunk honey. Prices on request. Sample 15c. F. W. Summerfield, Waterville, Ohio.

FOR SALE—Comb and extracted white clover honey, guaranteed first class in every respect. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—New crop finest quality put up in 60-lb. cans, also 5-lb. pails. Prices on request. W. M. Peacock, Mapleton, Iowa.

FOR SALE—Light, amber and dark extracted honey in 2½'s, 5's, and 60's. Prices on request. O. H. Schmidt, Bay City, Rt. 5, Mich.

FOR SALE—Choice 1925 crop clover extracted honey in new 60-lb. cans and cases. Prices on request. W. X. Johnston, Port Hope, Mich.

WHITE clover honey, new, 60-lb. cans, one to three cases, 11½c; 3 cases or more, 11c per lb. Sample, 20c. Hoehn & Honigford, Ottoville, Ohio.

FOR SALE—White clover honey in 60-lb. cans. Thoroughly ripened before extracting. Two cans to the case. Frank Coverdale, Maquoketa, Iowa.

FOR SALE—Choice white and light amber Michigan extracted honey in NEW 60-lb. cans, case or carload. Sample 15c. David Running, Filion, Mich.

CLOVER and basswood honey blended by the bees. Color white, body fine. Prices upon request. State amount wanted. W. A. Jenkins, Rock Port, Mo.

FOR SALE—Finest clover honey, ripe and light in color, in new 60-lb. cans and cases. Also 5 and 10 lb. pails. Sample, 15c. A. S. Tedmand, Weston, Mich.

HONEY FOR SALE in 60-lb. tins. Clover, crystallized, at 13c per pound; clover, liquid, at 14c per pound. Hoffman & Hauck, Inc., Ozone Park, N. Y.

FOR SALE—No. 1 white comb honey, $5.00 per case of 24 sections; No. 2, $4.00 per case; dark comb, dollar less; dark extracted, 9c lb. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Choice extracted honey, two 60-lb. in a case. White clover, $14.00 per case; light amber, $13.00 per case; buckwheat, $12 per case. J. G. Burtis, Marietta, N. Y.

EXTRACTED honey in new cans liquefied, clover-fruit bloom, 2 60-lb. cans to case, $14.40; mild buckwheat, $12.00 per case; granulated ½c lb. less. J. J. Lewis, Lyons, N. Y.

FOR SALE—Fine quality light extracted honey in 60-lb. cans, 2 cans per case. State how much you can use and I will quote price. L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE—Clover, amber, and buckwheat extracted and comb. Write for prices. F. W. Lesser, Fayetteville, N. Y.

FOR SALE—Finest flavor clover extracted honey, 12c lb. in 120-lb. cases. Send for sample. T. J. Rowe, Northstar, Mich.

OUR excellent extracted clover honey now ready for shipment. Write for prices. Sample 20c. Appeldoorn, Hamler, Ohio.

NEW crop clover and buckwheat honey in new 60-lb. cans, 160-lb. kegs and 5-lb. pails. Write for prices. H. B. Gable, Romulus, N. Y.

FOR SALE—Choice fancy 1925 crop white clover extracted honey in new 60-lb. cans, 12c per lb. Sample, 10c. Edw. A. Winkler, Joliet, Ill.

FOR SALE—Fall crop of comb and extracted honey. See October issue for prices. White honey all sold. Chas. B. Hatton, Andover, R. F. D. No. 3, Ohio.

DELICIOUS Colorado Honey "Mountain High in Quality," 5 and 10 lb. pails, 15c; 60-lb. cans, 12½c. Order now. John H. Leecing, Rocky Ford, Colo.

FOR SALE—Buckwheat extracted honey in 60-lb. cans. A few cans extracted honey for baking purposes. 75 cases comb mixed clover and fall flowers. Bee-Dell Apiaries, Earlville, N. Y.

FOR SALE—Very good grade buckwheat comb honey at $4.00 per case; six cases or more at $3.90. Will average better than 22 lbs. to case of 24 sections. Edgar Williams, Pierpont, Ohio.

HONEY for sale. Buckwheat extracted, 120-lb. case, $12.00; 12 5-lb. pails, $7.20; fine No. 1 buckwheat comb ,$4.00 per case in carrier lots. Prices f. o. b. Linesville, Pa., or Andover, Ohio. Paul D. Thompson, Linesville, Pa.

FOR SALE—12 barrels fancy water-white honey, about 6000 pounds in new oak barrels. Sold my home and must move in 30 days. The first $750, cash with order, will take the lot. Reference, State Bank. Ellis Pressler, Orlando, Fla.

FOR SALE—A carload of light amber extracted honey for table use in new 60-lb. net tin cans, at only 10c per pound. This honey is about the same grade as put up by the large bottlers for their best grade. Address E. D. Townsend & Sons, Northstar, Mich.

SPECIAL PRICES until December 1 or until sold out. Dark buckwheat extracted. 1 60-lb. can, $5.50; 2 60-lb. cans, $10.50; light amber, per case of 2 60-lb. cans, $11.00. Usual quality. Samples free. Roscoe F. Wixson, Sales Dept., Dundee, N. Y.

FOR SALE—In one of the garden spots of the world. No frost. Always green. 400 colonies of bees in three locations. Seven-room frame house, outbuildings. Stock valued at $2000. Will sell part or all of above at sacrifice. Sickness cause of sale. Penn G. Snyder, Aibonito, P. R.

OUR water-white, new crop clover honey is now ready for sale. This honey is sweet clover blended with little Dutch white clover. Price, 10½c f. o. b. Moville, Iowa. This honey is packed in good used cans, 120 lbs. to the case. Please do not write for lower prices. Cash must accompany all orders. We guarantee this honey to be as described. Weaver & Son, Moville, Iowa.

HONEY FOR SALE—For the beekeepers whose supply may be short this season. We have the choicest extra quality sweet clover, fine white clover, alfalfa, some mesquite and a limited amount of orange that we can offer our friend honey-sellers who may be short. Also comb, all grades. Write for prices. The A. I. Root Co., Medina, Ohio.

FOR SALE—100 cases fancy clover comb honey, $5.00 per case; 200 cases fancy buckwheat, $4.50 per case; 100 cases No. 1, $4.00 per case. Silsbee Apiaries, Bath, N. Y.

OUR HONEY BULLETIN sent on request. Quotes you advantageous prices on large and small lots. Shipments from our stock here or direct from the producer. White clover honey of heavy body, packed in 60's. Also some autumn. Send us a card today. The A. I. Root Co. of Iowa, Council Bluffs, Iowa.

RASPBERRY HONEY was left with the bees until thoroughly ripened, is thick, rich, and delicious, unexcelled for table use. In new 60-lb. cans, 15c a lb.; 10-lb. cans by mail, postpaid, $2.50 each. We have some amber colored fall honey with a thick heavy body, the richest, sweetest honey we ever tasted, in 60-lb. cans for 10c a lb. A sample of either kind, 15c. Elmer Hutchinson & Son, Lake City, Mich.

HONEY AND WAX WANTED

WANTED—Comb and extracted. J. E. Harris, Box 178, Morristown, Tenn.

WANTED—White clover comb honey. Glass-front case preferred. E. W. Peirce, 345 Cliffwood Ave., Zanesville, Ohio.

WANTED—Honey in ton lots or more. Mail sample and quote lowest price. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

BEESWAX WANTED — Highest market prices paid. Cash or in exchange for supplies. Write us for quotation before shipping elsewhere. The A. I. Root Company, Medina, Ohio.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

WANTED—A car or less quantity of clover honey in 60-lb. cans. Mail sample and quote lowest cash price for same; also send for my cut price circular on cans and pails for honey containers. A. W. Smith, Birmingham, Mich.

FOR SALE

FOR SALE—Soiled granulated cane sugar for bee feed. Winkler Honey Co., Joliet, Ill.

FLORIDA apiary for sale. Inspection certificate furnished. 150 colonies and trade to take entire output. T. McLaine, Boynton, Fla.

FOR SALE—50 new metal-top covers, half price; also a few pair New Zealand rabbits, $2.00 pair. Wm. Craig, Aitkin, Minn.

MAKE queen introduction SURE. ONE SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, Ohio.

FOR SALE—Old established beekeepers' supply business in western Pennsylvania. Reason, poor health. Come and see me at once. Must make deal now to insure territory and catalogs for next year. John N. Prothero, DuBois, Pa.

FOR SALE—Honey in 60-lb. cans. Sweet clover, basswood, white clover, buckwheat, and other flavors. Tell us what you want. Beekeepers who need more honey for their trade, and solicitors should write us. A. I. Root Co. of Chicago, 230 W. Huron St., Chicago, Ill.

FOR SALE—125 hives Italian bees. Complete standard 10-frame equipment for extracted honey production. Colonies guaranteed to be in good condition and free from disease. Excellent location for queen and package business. Write for particulars. J. J. Patton, Foster's, Ala.

WANTS AND EXCHANGES

WANTED—Two-frame extractor. Marion Kelleher, R. F. D. No. 4, Independence, Iowa.

WANTED—10-frame standard hives and supplies. Must be cheap. Geo. Graff, Hart, Mich.

BEESWAX WANTED—We are now paying very high prices for beeswax, both cash and trade. Write us for quotations and we will be very glad to quote you f. o. b. Hamilton or f. o. b. your shipping point. Dadant & Sons, Hamilton, Ill.

BEES AND QUEENS

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

UNTESTED Italian queens, $1.00 each. Autauga Apiaries, Autaugaville, Ala.

HARDY Italian queens, $1.00 each. W. G. Lauver, Middletown, Pa.

QUEEN BEES in season, $1.00 each. Graydon Bros., Rt. 4, Greenville, Ala.

1926 PACKAGE BEES—Pure Italians. Write for prices. J. J. Scott, Crowville, La.

WHEN IT'S GOLDEN, IT'S PHELPS. C. W. Phelps & Son, Binghamton, N. Y.

LEATHER-COLORED Italian queens, $2.00 until June 1; after, $1.00; tested, $2.00. A. W. Yates, 15 Chapman St., Hartford, Conn.

SHE-SUITS-ME queens. Untested 3-banders, $1.00 each; 25 or more ordered in advance, 75c each. Safn cage with initial order. Allen Latham, Norwichtown, Conn.

GOLDEN ITALIAN queens, producing large beautiful bees, solid yellow to tip. Package bees, nuclei circular, 1926 ready free. Dr. White Bee Co., Sandia, Texas.

GOLDEN ITALIAN queens for sale, 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees in season, 20 per cent to book your order for spring delivery. J. F. Rogers, Greenville, R. F. D. No. 3, Ala.

THREE-BANDED Italian queens. Package bees for 1926. Gentle and good honey-gatherers. Everything guaranteed. Write for price list, which gives full information. Taylor Apiaries, Luverne, Ala.

BOOKING orders for high-grade three-banded Italian bees and queens, 2-lb. pkg., $4.50, discount on quantity. Select untested queen, $1.00; $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each. J. Allen, Catherine, Ala.

QUEENS—When you need a good queen you may be sure you will get one of Laws' best by return mail. Can furnish every month in the year. Better requeen those colonies that have paid you least, and do it this fall. Price $1.00 each. W. H. Laws, Box 505, Wharton, Texas.

BRIGHT American Beauty Italian queens and bees. Untested queens, $1.00, 3 or more, 75c each; $8.00 a dozen. Three-frame nuclei, $5.00. Guarantee safe arrival. Tupelo Apiaries, J. L. Morgan, Apalachicola, Fla.

FOR SALE—700 colonies of bees, big extracting honey outfit in 8 yards. A little disease, 10 acres of land, 8 lots, 8-room home, 2-car garage, honey-house. Buildings all new. Excellent location and healthy climate. If you have the money to swing a big deal come and look this over. Will sell including honey crop or without. E. W. Fox, Fruitdale, S. D.

ATTENTION, NORTHERN HONEY PRODUCER—ST. ROMAIN QUALITY BEES ready for 1926 season. I am in position to furnish several carloads of nuclei and pound packages at a very reasonable price. Shipping season starts April 1, 1926, and all bees are absolutely free from disease. I furnish health certificate with each shipment, also guarantee safe arrival. All bees shipped on comb of emerging brood and honey for feed in transit, also combless packages, if customer desires. Prices as follows: 1 2-lb. pkg. with queen, $3.00; 1 3-lb. pkg. with queen, $4.00; 1 4-lb. pkg. with queen, $5.00. Large orders will be given special attention. Address John St. Romain, Marksville, La.

MISCELLANEOUS

I want acquaintance with honey bottlers and jobbers. A. V. Biron, Carona, Kans.

OLD bee books wanted. Prof. Francis Jager, University Farm, St. Paul, Minn.

"BEES AND HONEY" is the only bee paper in all the great Pacific Northwest—soon to be America's most wonderful beekeeping territory. Sample copy free. Gleanings ($1.00) with Bees and Honey ($1.00), both together one year for only $1.60. Address George W. York, Editor, 524 First Ave., So., Seattle, Wash.

THE BEE WORLD—The leading bee journal in Britain and the only international bee-review in existence. It is read, re-read, and treasured. Will it not appeal to you? Specimen copy free from the publishers. Send us a postcard today. It is well worth your little trouble. The Apis Club, Benson, Oxon, England.

HELP WANTED

WANTED—Beekeeper for season of 1926, April 1 to Nov. 1. Bee-Dell Apiaries, Earlville, N. Y.

New 300 Candle Power Lamp

AMAZING INVENTION. Brilliant, soft, mellow white light, restful to eyes. Burns 96% air. Equals safety, brilliancy of electricity, 1-10th the cost. 20 times brighter than wick lamps. More healthful. Easy to operate. No smoke. No soot. No odor. Low priced. Guaranteed. Table lamps, wall, hanging lamps and lanterns.

AGENTS!
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Make big money. New plan. Simply accept orders. No experience or capital required. Outfit **Free** to hustlers. Send for exclusive territory and **Free Outfit Offer.**
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FREE Trial.
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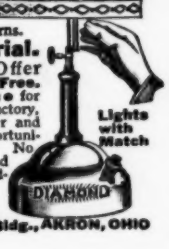
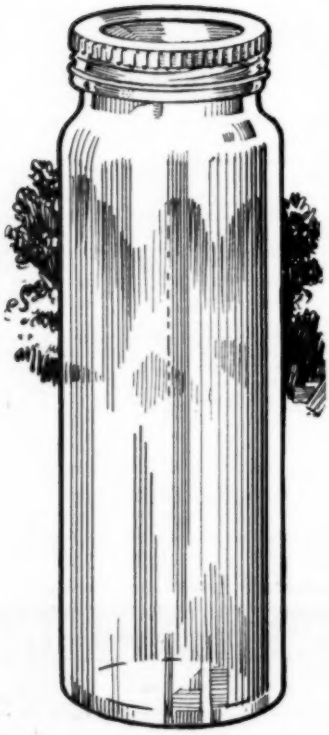
Try it 30 days **Free.** Write **at once** for special introductory, low price, offer and free trial opportunity. No risk. No obligation. Send name and address today.
The AKRON LAMP CO.
2491 **Lamp Bldg., AKRON, OHIO**



QUALITY SERVICE - PRICE

Every sale is dependent upon these three factors



Standard HA Honey Jars

Combine them all, together with attractiveness of design (they have no panels to shadow and darken the honey) and sturdiness of construction.

Buy them once through curiosity, you will buy them forever from choice.

DISTRIBUTORS

The A. I. Root Copany. Medina, Ohio.

Hoffman & Hauck, 1331 Ocean Ave., Woodhaven, N. Y.

A. G. Woodman Co., Scribner Ave. and Blumrich St., Grand Rapids, Mich.

The A. I. Root Co. of Iowa, Council Bluffs, Ia.

A. I. Root Co. of St. Paul, St. Paul, Minn.

Hazel-Atlas Glass Company
Wheeling, W. Va.

(Continued from page 744.)

matter was weighin heavy on his offishul brain. They pretended as how they were after some informashun of George Demuth and comb-honey gradin idees. But they was not. Just as soon as they could find me for I wasnt fishin that day they began to pump me about my winter-hunger resistant strain of bees. They was crazy for all the informashun they could get and I could see they was just green with jealousy and tryin to get all my tecknickel points so as they could rush back to Washinton and start to beatin me to it. The questions those gents asked would fill a book. So I warn the beekeepin world agin Jim Hambleton and E. L. Secrist and the whole U. S. Dept. of beekeepin claimin the credit for originatin the great American winter-hunger resistant strain of bees. I done that, or else rather I am doin it, and they aint entitled to no credit in it atall so they aint. I will say for Jim he approved the whole idee tecknickelly and all, and next to me and Doc Kohn deserves credit, and this too shows as how he is where he ought to be at the head of all beekeepin in the U. S. He's broad-minded. Doc Phillips aint and wouldnt encourage me as Jim does, although Jim is awful jealous. When Jim and Secrist got thru stealin my idees, I said to Jim: "How about your new $40 honey grader? Are the beekeepers a flockin in to Washinton and crowdin up to the retail counter at the U. S. Dept of Beekeepin till you cant take in their money to say nothin of passin back honey graders to em?" I asked it all civil and what do you suppose he answers? He says "you go to heck," he did, just like that. And I says you needn't go off mad, Jim, for I want one and I'll pay you out of my coon fur money about Thanksgivin time. Then he talked worse yet than above. All I said was: "Jim, don't talk that way. It aint right. How did I know them $40 honey graders was selling so fast that you wouldnt give a feller a little time to pay for one and seem insulted so?"

* * *

The coonin and trappin season is so nigh to hand and the bass fishin has been so good in October I may be a little distracted off the details of my winter-hunger resistant strain of bees proceedins. I packed em with attenshun to almost every detail Oct. 25. The cornstalks was of the Country Gentleman variety. Any cornstalk as didnt look like a Country Gentleman I rejected with disdain for I like the name. That is the first and foremost tecknickel point I will give the waitin beekeepin world at this time. I put the cornstalks on the north and west sides horizontal to the ground. Remember

(Continued on page 752.)

1000 Colonies to Draw From

We are ready to book your order for bees for 1926, and guarantee to please any reasonable man. We have as good as the best, serve all our patrons alike and at the same price, and never promise any thing we can not do. Write for list of satisfied customers and ask them about us.

Will send you either 3 lbs. and queen or 3 frames and queen, just as you like, but prefer the 3 lbs. Suit yourself. All the same price.

J. G. Puett & Sons
Moultrie, Ga.

COMING!
NEXT MONTH
in Gleanings in Bee Culture

Wintering Without Loss

—By—
PROF. FRANCIS JAGER,
Department of Agriculture, University of Minnesota

A Wonderful Article

Watch Your Subscription

To New York State Beekeepers

Have you received our descriptive price list on HONEY CONTAINERS? We have a good stock of everything needed to market your honey in the most up-to-date manner—display and corrugated shipping cases, cartons for comb honey, all kinds of honey pails and cans.

Write for our prices

A. I. Root Co. of Syracuse
1631 West Genesee St.
SYRACUSE, N. Y.

Serves You Best

HONEY FOR SALE

For the beekeepers whose supply may be short this season. We have the choicest extra quality sweet clover, fine white clover, alfalfa, some mesquite and a limited amount of orange that we can offer our friend honey-sellers who may be short. Also comb, all grades.

WRITE FOR PRICES

The A. I. Root Co.
Medina, Ohio

KITSELMAN FENCE

'Saved about $18,' says Earl I. Kramer, Orwigsburg, Pa. **You, too, can save** by buying direct at Lowest Factory Prices. **WE PAY THE FREIGHT.** Write today for Free Catalog of Farm, Poultry and Lawn Fence, Gates, Steel Posts and Barbed Wire.
KITSELMAN BROS., Dept. 21 MUNCIE, IND.

American Poultry Journal

Oldest, Largest and Best
3 MONTHS FREE
All ONE, TWO or FIVE year subscriptions received before Dec. 31st will be entered to commence with the January issue, and the Oct., Nov. and Dec. issues of this year will be mailed FREE. Order today and get them.
1 Year 75c. 2 YEARS $1 5 Years $2.00
Averages over 100 pages per issue. Tells how to feed, house and breed; how to secure high egg production; how to hatch and rear poultry successfully. 4 months trial subscription 25c.
American Poultry Journal, 22-523 Plymouth Ct., Chicago

Make Money with Chickens

Learn how others do it! Double your profits this year—read America's most popular poultry magazine. POULTRY TRIBUNE shows how to get better hatches, stronger chicks, more eggs, better markets, BIGGER POULTRY PROFITS. It's the magazine with the beautiful colored poultry pictures. $1.00 a year, 3 years for $2.00. Subscribe NOW and get a copy of our FREE BOOKLET "How Hens Helped Run Our Farm," all based on actual experiences of readers. Four months trial, without book, 25 cents. Send stamps or coin today.
Poultry Tribune, Dept. 219 Mount Morris, Ill.

CANDY FOR WINTER

When packing your bees be sure and give them some of this candy. Just what you need for colonies short of stores. Put up in convenient form, easily and quickly placed in hive. A trial will convince you. Send for circular and price.

H. H. JEPSON

237 Park St. Medford 55, Mass.

FOR SALE DURING NOVEMBER AND DECEMBER, 1925

Hoffman self-spacing brood-frames, per 100, $4.50. Shallow self-spacing frames, per 100, $3.25. Section-holders for 4¼x4¼x1⅞ super, per 100, $3.00. Scalloped separators for above super, per 100, $1.45.

E. GRESSMAN, HAMBURG, N. Y.

NEW CATALOG READY

BEEKEEPERS' SUPPLIES
Root's Goods of High Quality
Three ply foundation, standard stock of supplies kept on hand for prompt shipment. Send us your inquiries and orders early for quick action.

J. NEBEL & SON SUPPLY CO.
Montgomery County High Hill, Missouri

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR OCT. 1, 1925.

State of Ohio, County of Medina, ss.:

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared H. G. Rowe, who, having been duly sworn according to law, deposes and says that he is the Business Manager of Gleanings in Bee Culture, and the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Name of— Post office address—

Publisher, The A. I. Root Company, Medina.

Editors, E. R. Root and Geo. S. Demuth, Medina, Ohio.

Managing Editor, H. G. Rowe, Medina, Ohio

Business Manager, H. G. Rowe, Medina, Ohio.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

J. T. Calvert, Medina, Ohio; Maude R. Calvert, Medina, Ohio; H. H. Root, Trustee of A. I. Root Estate; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; Mabel K. Root, Medina, Ohio; Trustees of Employees' Profit Sharing Fund.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities, are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only.)

H. G. ROWE, Managing Editor.

Sworn to and subscribed before me, this 30th day of September, 1925.

H. C. WEST, Notary Public.

(My commission expires March 27, 1928.)

Bee Supplies That *Are Made to* Satisfy

The three points of Rusch Service that are keeping old customers satisfied and bringing new ones are:

RIGHT PRICES,
REAL SERVICE,
HIGHEST QUALITY.

A trial order will convince you.
Write for our catalog.

A. H. Rusch & Son Co.

Reedsville, Wisconsin

Honey Containers

5-lb. friction-top pails, per case of 12	$1.10
10-lb. friction-top pails, per case of 6	.90
5-lb. friction-top pails, per carton of 50	3.50
10-lb. friction-top pails, per carton of 50	5.00
60-lb. square cans, per case of 2 cans	1.25
60-lb. square cans, in bulk, each	.40
16-oz. round glass jars, per case of 24	1.25
6½-oz. tin-top tumblers, per case of 48	1.60

All above prices are F. O. B. Boyd, Wis.

Write for our prices on comb-honey shipping cases.

AUGUST LOTZ COMPANY

BOYD, WISCONSIN.

(Continued from page 749.)

that, too. If it hadnt been such a good bass afternoon and my fishin friend Ab Lutz hadnt been yellin for me to hurry up, and if I hadnt been fearin that before Ab and I could get started for the creek my wife might get home from the store where she went to sell the surplus honey I was to take off, I now think I would have given a different cornstalk treatment and placed them vertical instead of horizontal and tied them above and aft the hive. That tecknickelly is correctly. But Ab was yellin so and my wife was so liable to heave up on the landscape any minute that I did it as and how above stated. Also another reason for my gettin away previously to my wife's gettin back and so slightin some of the best usages of cornstalk packin was that when I opened up my hives that afternoon to take off the surplus honey my wife had gone down to the store to sell, there warnt none. This surplus honey was what I was goin to bung her eyes out with and make her see me in a new light. Well, when there warnt none and she had sold it already, it looked peacefuller to me down at the big hole on the creek fishin with Ab than explainin to wife where that surplus honey was that she had just sold. I callated too I could arrange a more sistematic and bumb proof explanashun about the surplus if I was somewhere my wife wasnt while I arranged same. She sometimes disturbs thought that needs careful arrangement. So praps I never would of thought with her present and commentin continuous to tell her I had put the honey up in Ab's hay mow over the cowstable and also too taken the ladder away and hidden it so nobody could get up there and steal it after she had sold it to the groceryman. I also told her it would have time to ripen up there too. Why take the trouble of stickin in every little detail in tellin your wife the truth? You dont have to, do you? How much peacefuller at our house right now, for example, and when my coon fur money gets to pourin in I am goin to buy some honey somewhere and put it up in Ab's hay mow just as I told my wife. It's all workin slick as a pig's greased ear so far.

* * *

I aint now going to give much more of the teckneek of my winter-resistant packin, for I know Jim Hambleton and Secrist and Fracker and Paddock and Doc Phillips and Morley Pettit and a whole crew of other high-brow body snatchers

(Continued on next page.)

Glass and Tin Honey Packages

F. O. B. Chicago and Points East.

5-lb. friction-top pails.....per 100, $7.00; per 200, $13.00; per 500, $30.00
10-lb. friction-top pails.....per 100, $10.00; per 200, $19.00; per 500, $45.00

F. O. B. Chicago and Detroit

60-lb. cans, cases of two.....per 10, $11.00; per 25, $25.00; per 100, $95.00

F. O. B. Grand Rapids

½-lb. glass jars.....per 2 doz. case, $1.00; 10 cases $ 9.50
1-lb. glass jars.....per 2 doz. case. $1.25; 10 cases, $12.00

Prices on tin packages from Grand Rapids and glass jars direct from manufacturers, made on request. Complete line of cases for comb honey, honey cartons, labels, paste, etc. Send for list.

A. G. Woodman Co., Grand Rapids, Mich.

7 Commerce Street

THAT IS OUR NEW ADDRESS—JUST ACROSS THE STREET. WE ARE BETTER ABLE TO SERVE YOU. GOODS SHIPPED PROMPTLY. GET OUR PRICES BEFORE BUYING.

Root QUALITY BEE SUPPLIES

A. I. Root Co. of Norfolk

7 Commerce St., Norfolk, Va.

are just layin low to snitch all the credit of this great beekeepin discovery from me over to theirselves. But I aint agoin to let em, not leastwise by talkin too much premature. All I now add is that there bein no surplus honey nor no unsurplus honey either in my hives atall, the test for hunger resistants will be better than I first planned.

* * *

Friends are writin to this dept. daily and offerin every kind of moral support. One sends me a check for a million dollars signed by John D. Rockeyfeller, countersigned by Henry Frod for two of J. L. Byer's silver foxes for which I was U. S. agent. This was Mr. Leslie Burr of Willits, Calif. The million aint nothin, but now we are goin into the fox farm business ourselves and run J. L. Byer and his foxes out in the Bay of Fundy. He never sent the foxes or the wire fencin to me as his U. S. agent, and now if this Rockeyfeller check goes thru old Byer will see what kind of fox competition he'll get on this side of the line. Mr. Leslie Burr has my thanks for makin me shut of that old honey crab up at Markham, Ont., who dont get this million dollar check and no queen bees of me ever, and I wish I could tell him just what Jim Hambleton told me to do only I dont talk so.

* * *

Nov. 15 and trappin season only three weeks away. My bees packed in 10 minutes' time. Ernie Root aint sawed up those slabs yet and it's snowin today, too. Demuth's gone off out to Indianny to take a week to pack his bees and break his back in his stuck-up way when my way would take him about no time atall. That new coon dog too and no end of tracks along Hardscrabble Creek. I never had things better set than right now or settin any prittier myself. I only wish I hadnt told my wife quite just so exact precisely where I put that surplus honey. She said at breakfast this mornin she believed one of her pullets had stolen its nest up in Ab's hay mow over his cowstable for she saw it flyin up into there.

OLD DRONE.

P. S.—Write me for silver foxes and send checks any size direct to me just as Mr. Burr did. Don't buy any foxes of old Byer if you don't ever buy a fox.

(Honey Market continued from page 696.)

From Producers' Associations

The honey marketing situation has during the past few weeks been quite satisfactory. A number of carloads of comb honey have been moved and mostly at prices of $4.40 for fancy and $4.00 for choice f. o. b. loading point. Extracted honey has moved at from 8¾c to 9¼c f. o. b. loading point in carload lot for strictly white stock. The crop of honey in northern Colorado has been disappointingly small, and this naturally has quite an influence on the amount of honey to be shipped out of Colorado. However, Wyoming and Montana have had satisfactory yields and will have about the usual volume of honey to ship. Weather conditions so far have been exceptionally good. We have not had any cold weather yet in Colorado, but Wyoming and Montana have had a little taste of winter weather.

Colorado Honey Producers' Assn.,
Denver, Col. F. Rauchfuss, Sec'y.

The demand for honey so far this season has been very active, owing to the wonderful quality of Ontario honey this year. Our company has sold four times as much honey in the month of September as we did in the corresponding month last year. Our company is unquestionably increasing the consumption of honey by the distribution of honey pamphlets showing the wonderful food properties of our product, and also by judicious advertising.

Ontario Honey Producers' Co-op., Ltd.,
Toronto, Ont. A. G. Halstead, Gen. Mgr.

The A. I. Root Company's Report

Since September 24 we have bought carlots of white to water-white white clover extracted honey at 9c per pound f. o. b. shipping point where local freight rates applied. Carload lots from western producers in Idaho and Wyoming have brought 8½c per pound f. o. b. shipping point. We have paid 7½c and 8c per pound for less than carload lots of light amber and buckwheat extracted honey coming from local points in New York, Pennsylvania, and Michigan. We have bought fine comb honey at $4.50 per case for fancy, and $3.75 for No. 1, f. o. b. shipping point, with western carload freight rates applying.

HONEY WANTED

We are ready at any time of the year to take in small or large lots of extracted honey. Send us a sample and advise quantity you have and the price wanted.

HOFFMAN & HAUCK, OZONE PARK, N. Y.

HONEY PAILS

MANUFACTURERS OF
"BLOSSOM-SWEET"
AND
BADGER BRAND
5 and 10 lb. Honey Pails.

We specialize in 5 and 10 lb. round pails and 60 lb. square cans. Plain and Lithographed cans of all descriptions.

WILKES-BARRE CAN CO.
ESTABLISHED 1856
WILKES-BARRE, PENNA.

EDWARDS METAL ROOFS

Make Your Money Go Farther

Save the middleman's profit by buying direct from us at factory prices. Get better quality, lasting satisfaction. We own our own sheet mills, roll our own sheets, control every operation from the raw material to the finished product.

EDWARDS "REO" METAL SHINGLES look good, outlast three ordinary roofs. No painting or repairs. Guaranteed fire-proof, rust-proof, lightning-proof. Easy to put on. We also sell V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, Ready-Made Steel Garages, Farm Buildings, etc.

GET OUR FACTORY PRICES

By buying direct from us you save money, get better value. We are the largest manufacturers of metal roofing in the world. Thousands of satisfied customers every year are our best advertisement.

FREE SAMPLES & Roofing Book

Write today! Get our wonderfully low prices, lasting satisfaction. Ask for Roofing Book No. 183 or for Garage Book.

THE EDWARDS MFG. CO.
1133-1183 Butler St.
Cincinnati, Ohio

Patents Practice in Patent Office and Court.
Pat. Counsel of The A. I. Root Co.
CHAS. J. WILLIAMSON,
McLachlan Bldg., Washington, D.C.

4% BANKING BY MAIL

YOUR NEAREST MAIL BOX

can be your "bank" if you carry your Savings Account with this institution. And you receive the same interest—4 per cent—as those who call personally.

THE HOME OF THE HONEY BEE

THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO.
E.B. SPITZER, PRES. E.R. ROOT, VICE PRES. H.E. AYLARD, CASHIER

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies. Write for our terms and prices.

"Falcon"

Supplies--Queens--Foundation

W. T. Falconer Mfg. Company
Falconer, New York (near Jamestown)
"Where the best beehives come from."
Ask for catalog. *Booklet, "Simplified Beekeeping for Beginners," free.*

Reliable Package
Bees Are Profitable

And it takes more than good intentions and financial guarantees to produce and deliver them safely to you. Those who have specialized and have had years of experience in package shipping can unquestionably serve you best. Their prices are right because they have their businesses organized and equipped to produce the best at least cost.

We have been shipping package bees thirteen years and are now preparing for the season of 1926. Let us quote you prices on your requirements for the new year.

W. D. Achord
FITZPATRICK, ALA.

Queen Talks

BY M. J. DEYELL, Apiarist

THE VALUE OF VIGOROUS QUEENS
(Talk No. 2)

The word vigorous, according to Webster, means strong; robust; energetic; lusty.

Vigorous queens will lay more eggs in a given length of time, and live longer than queens lacking in vigor. Furthermore, vigorous queens, when mated with vigorous drones, are sure to produce vigorous worker bees that will gather more honey in a given length of time, all other things being equal, than bees that lack vigor.

Maximum honey production is what honey-producers are working for now-a-days. In order to secure the maximum crop of honey, all colonies of bees should be headed by vigorous queens.

Conscientious queen-breeders endeavor to produce queens that are vigorous, and this is accomplished by giving attention to this important characteristic in the selection of breeding-stock.

The A. I. Root Company
MEDINA, OHIO.

Superior Italian Bees
Package Bees for 1926

Over 6,000 packages shipped this season and practically no losses in our new cages, which have been improved for next spring's shipments. If you intend purchasing packages, we would be glad to go into the matter fully with you.

We would be glad if our customers or anyone else would write us if they think we should be BONDED, and give their reasons.

CYPRESS BEE SUPPLIES. Eternal bee hives. White pine frames. Shallow extracting supers. A full line. If we can't save you money we don't want you to trade with us.

THE STOVER APIARIES

Tibbee, Miss. **Telegraph Office, Mayhew, Miss.**

Our Guarantee and Advertising Conditions.

Believing that all the advertisers in this journal are trustworthy, we make the following guarantee of our advertising, together with a statement of the conditions we must exact both from our advertisers and from our subscribers who may patronize such advertisers:

OUR GUARANTEE (subject to conditions herein mentioned): We will make good to paid subscribers the loss of money that may be sent to any deliberate swindler or irresponsible advertiser by reason of any misleading advertisement that may be printed in our columns.

We will promptly discontinue the advertisement of any advertiser against whom a clearly valid complaint is made by a subscriber, and such advertiser will not be restored (if at all) to our columns until he has fully satisfied such complaint; furthermore, if we find that the facts sworn to in affidavit by the complainant and the circumstances warrant it, we will then not only exclude the advertiser from our columns, but at our own expense will proceed (by law, if necessary) to compel him to make restitution or to secure his proper punishment.

WHAT WE DO NOT GUARANTEE: We will not guarantee against bankrupts sanctioned by the courts. We will not guarantee the settlement of disputes between subscribers and honest advertisers, nor against loss and delay caused by honest advertisers who may be unable to fulfill conditions or contracts because of innocent misfortune or unfavorable conditions beyond their control. We will not guarantee any deal for bees and queens in which the purchaser advances the cash to the queen or bee rearer without an arrangement, either through a bank or express company, whereby the purchaser can examine the bees or queens upon arrival and before the cash is released to the shipper—wishing our subscribers to take the same business care we ourselves would take in making a deal for queens or bees and trusting our "cash in advance" to those only we know by experience have an established record of honest business dealing. (In making this last condition, we in no way challenge the right and propriety of the honest business-like, prompt queen or bee rearer to ask pay in advance, either the whole or part, for he is worthy of such confidence, has proved himself, and can secure orders on cash-in-advance terms. But the purchaser should know his bee or queen dealer, if he is to advance the cash, and if he does so it must be at his own risk—not ours). We will not guarantee the purity of any seed advertised nor any nursery stock, as nurserymen ordinarily will not do this themselves; but any seedsman or nurseryman advertising in our columns will have given us excellent references in advance, and our readers may consider this fact in their favor. We will not guarantee advertisers more than one month after the last appearance of their advertisements in our columns. We will not guarantee temporary advertisers for "help wanted," "position wanted," nor advertisers of single sales or of small or second-hand articles, in which transactions the terms of bargain and payment are special and the purchaser can, by taking care, guard his own interests. We will not guarantee any honey buyer's financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms, except when the buyer has thoroughly established his credit with the seller.

CONDITIONS INCUMBENT UPON OUR SUBSCRIBERS: In order that our subscribers may secure the benefit of our advertising guarantee in case of need to do so, they must mention in writing to advertisers that they are replying to an advertisement seen in Gleanings in Bee Culture. They must give notice of complaint against an advertiser within one month of the time of the transaction complained of, and only after having made written complaint to the advertiser in question; such complaint to us must be in the form of a sworn affidavit as to the facts set forth in the complaint, if the complainant wishes us to take up his claim against the advertiser; the right of examination of the article to be purchased before payment for it, must be demanded and made in all cases wherein the purchaser does not know to his full satisfaction the dealer of whom he is to purchase. Our subscribers will be solely responsible for the terms they agree to with advertisers and must use all reasonable caution and diligence in making such terms and in satisfying themselves of the conditions and quality of any article or commodity offered for sale.

CONDITIONS INCUMBENT UPON OUR ADVERTISERS: We reserve the right, at any time, to cancel any advertising contract and discontinue advertisement, and refund, pro rata, for space not furnished under contract. Every advertiser, unless well known to us and with an established record for honest and prompt dealing, will be required to furnish satisfactory credentials as to both character and financial standing, the endorsements of a local banker, postmaster and official, or three other endorsements equally as good, being asked for by us. Queen and bee rearers, who seek to advertise in our columns, must furnish not only satisfactory character and financial references, but must sign our Code for the Sale of Queens and Bees, answer our questionnaire as to their beekeeping and apiary condition; and, if new in the business of selling queens and bees, must furnish us with the endorsement of at least five reputable beekeepers or a beekeepers' society, or give an indemnity bond, or furnish us with both the endorsement of beekeepers and the bond. All advertisers must not only deal honestly, but they must follow correct business practice, be prompt in business correspondence and in the delivery of goods, or else expect to be barred from our advertising columns for such business delinquencies.

WHAT WE SEEK TO ACCOMPLISH: By this guarantee and its conditions we seek the accomplishment of two purposes: to drive the unreliable advertiser out of our columns and even punish him by law if he so deserves and it is possible to do it; to be relieved of the burden thrown upon us in the past by the unwise deals of our readers and unjust complaints against honest advertisers.

GLEANINGS IN BEE CULTURE,
The A. I. Root Co., Publishers.